Textile World

FEBRUARY, 1958

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What's Ahead in

TEXTILE BUSINESS . . .

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CHEMICAL TREATMENT . . .

MANAGEMENT . . .

SUPERVISION . . .

. . . for

1958?

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This Month in **TEXTILE WORLD** February, 1958

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BUSINESS

Inventory Policies Key to Business Upturn. Mills are off to a head start in cutting inventories, but they still have more to do 3

Finishers Face Battle of Attrition. Northern plants are being forced to the wall by high wage costs and fewer orders. Printers are hardest hit 4

Mill Earnings Rise. Modest increases could be in the cards based on gains in third-quarter, 1957, profits and the good showing of big mills 5

Capital Spending Drops. Latest estimates put mill spending for new plant and equipment in the first quarter at lower levels 6

Tire Prospects Brighten. Car production lags, but a fall-off in new-car sales does not lessen the nation's need for tires 7

New Life for Housing? Home-furnishings mills are encouraged by recent credit-easing moves designed to boost new-housing starts 8

ODM Sees No Threat in Wool-Fabric Imports. Wool mills' pleas for more protection from imports are called unwarranted at this time 10

India's Textile Industry Eyes Bigger Markets. Long-range program aimed at boosting world markets could have repercussions in the U. S. 10

MANAGEMENT

No Feast or Famine? (Editorial). The two-year cycle of the textile industry is off schedule. Has it become obsolete as a management tool? 79

Annual Review & Forecast . . . of economic and production trends shows that the upturn expected in 1957 did not occur. It is now looked for in 1958 81

Urgent Aim for 1958—Cut Production Costs. For mill men trying to solve the dwindling-profits problem, the editors of TEXTILE WORLD answer the key questions: What was the significance of 1957 in textile manufacturing? What production and management roads will the industry follow in 1958? 86

Textile Automation—New Mass-Counting System Analyzes Loom Operations. Centralized mass-production control is now possible with a new electronic system being used to measure both machine and employee performance 102

Pointers for Supervisors—How Well Do You "Communicate"? 151

Retired Employees Can Have Valuable Ideas 166

PRODUCTION

. . . CARDING

How Fitchburg Yarn Co. Tests Roving. Use of two testing instruments has improved uniformity of draft, twist, and tension 107

How One Mill Stopped Thick Places in Yarn . . . by installing a special knockoff motion at the slubbers 149

Air Currents in Cards Pull Few Fibers From Wire 198

. . . SPINNING

Woodside Reduced Ends Down at Spinning 50% . . . by modernizing equipment, establishing preventive maintenance, and investigating causes of yarn breakage .. 141

This Checklist Reduces Defects in Spooling and Warping 200

. . . THROWING

How Claussner Hosiery Co. Makes Taslan Yarns 108

. . . WEAVING

Two Slashers Replace Four at Arkwright Mills. This modernized slasher room sizes more warps of better quality with half as many slashers 145

Stretching Yarns Too Much Can Cause Weaving Trouble 202

. . . KNITTING

Products and Methods Change at Griffin-Jaco Mills . . . to meet changes in style and eliminate seasonal peaks and valleys in production 104

When and How To Lubricate Tricot Machines 204

. . . TUFTING

Tufted Bedspreads—An Old Home Craft Gives Way to Big Industry . . . and new machines and methods are shifting the bulk of production from small to large companies 110

Please turn the page

This Month in TEXTILE WORLD continued

CHEMICAL TREATMENT

This Month in Textile Chemicals 113
New Dyes & Chemicals 116
How Southern Bleachery Produces Fine Cotton Prints 118
Roxbury Dyes Carpet Wools . . . using modern machinery and methods to produce 125,000 lbs. of stock-dyed wools and 75,000 lbs. of package-dyed yarn per week 122
How To Set Nylon Tricot by Continuous Steaming 127
AATCC Papers Report on Trends in Chemical Treatment 130

DEPARTMENTS

Book Reviews 185
Calendar 16
Editorial 79
Equipment and Supply News 169
Kinks and Short-Cuts 153
Mill Maintenance 205
New Dyes and Chemicals 116
New Literature 182
News About Men 214
News About Mills 15
News About Suppliers 211
Obituary 215
Pointers for Supervisors 151
Questions and Answers 165
Reader Service 181
Round Table 18
Textile Chemicals 113
Textile Business 3
Advertisers' Index 226

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TEXTILE BUSINESS

Textile World

FEBRUARY • 1958

THIS MONTH'S HIGHLIGHTS

Inventory Policies Hold Key
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Finishers Face Attrition Battle
•
Mill Earnings Rise
•
Capital Spending Drops
•
Tire Prospects Brighten
•
New Life for Housing?
•
Money Rates Decline
•
Wool-Fabric Imports No Threat
•
Good Stock Prospects

Inventory Policies Hold Key To Business Upturn

A good start has been made on cutting heavy inventories at the mill level.

But last month, when most mills were beginning to see light as far as inventory reduction was concerned, a generally tight inventory policy set in at all levels of business that won't be much help to mills in the immediate future.

The process of inventory cutting is not a pleasant one, and if it lasts too long it can be very depressing because of the unemployment it causes.

But it is at least encouraging that inventories can be cut. It means goods are being sold faster than they are made; so an upturn in production will be needed sooner or later.

Key to economic improvement is a turnabout in the tight inventory policy. But right now, mills, converters, apparel manufacturers, wholesalers, and retailers are all keeping extra close tabs on inventories.

For mills so far, stricter inventory control has worked out well. A huge cut in print-cloth production last year served to halt a drastic price slide, although more needs to be done before the market could be called stabilized.

An index of inventories of cotton broad woven goods, computed on the pre-Korean base of 1947-49=100, stood at 259.4 in January, 1957. By August, the index had climbed to 302.8 but fell off to 289.5 in October. And the index should be lower now.

Unfilled orders last October exceeded mill inventories by only three weeks' production, whereas in October, 1956, the figure was 6.5 weeks.

In corduroys, for example, inventories are down 25% for both finished and gray goods. Looms on all corduroy fabrics are off 33⅓% from the peak in April, 1956.

And an important correction in spun-rayon gray goods started last month when most leading weavers cut back from a five-day week to a four-day week.

This attitude is paying off. Stevens, for example, reports that its stock of spun-rayon gray goods is 12% of what it was early in January, 1957.

A year ago, mills on spun-rayon gray goods cut back to a four-day week and kept this schedule into April. And Amerotron has continued its pledge not to operate in excess of a five-day week at any time during the year.

•

Textile wholesalers are not quite as optimistic as this time last year. Wholesale-dry-goods volume slipped 0.4% in the first 11 months of 1957 compared with the same period in 1956, and November volume was off 7.2% from the same month a year ago.

And department stores are pulling in their horns so far as advance ordering goes because of cloudy business prospects.

As one department-store leader put it last month: "We want to prevent future inventory imbalance and the inevitable markdown loss."

A recent survey of 2,000 retailers by the National Retail Merchants Association showed that 43% will carry lower inventories of soft goods in 1958 than they did in 1957. The figure was 22% a year ago.

And only 3% of the retailers interviewed this year plan to increase their stocks of soft goods. A year ago, 12% reported they would boost these inventories.

Now mills must gear their thinking to even tighter inventory policies of their customers. In spite of production slashes in print cloths, prices were sluggish last month. Buyers believe there is plenty of everything to go around, and they're not worried about the possibility of price hikes.

There is one bright spot: An inventory-reduction trend suggests a tendency toward eventual economic upturn.

Northern Finishing Plants Face Battle of Attrition

A drastic decline in textile-finishing capacity is taking place.

Dyeing and finishing plants in New England are the hardest hit; a combination of higher wages and fewer orders has forced more than a dozen firms to the wall in the last two years.

And the closing of the Glenlyon Print Works, Phillipsdale, R. I., several months ago and Apponaug Co., Apponaug, R. I., last month has culminated a long series of failures.

Shifting styles have seen a sharp drop in orders for printed fabrics in recent years, while bleached and plain-dyed fabrics have held up better.

This trend has taken its toll of printing plants. Of 13 finishing plants that closed in the last two years, nine were engaged in printing, with a total of 79 roller-printing machines.

And with Apponaug gone, another 17 roller-printing machines will be taken out of production.

This means about 25% of the total roller-printing machines in U. S. finishing plants are no longer in operation.

Screen printing has also been hit, the latest casualty being Ahern Textile Print, Norwich, Conn.

•

Most New England plants, unless running on specialties, are finding it harder all the time to compete with the big Southern finishers, where long runs and lower wage rates work to the advantage of efficient operators like Rock Hill, Lyman, Southern Bleachery and Cone.

Both the TWUA-CIO and the UTW-AFL have Northern finishing plants tied up with contracts. Last October a 6¢-an-hour wage increase was negotiated for most of these plants.

But unstable prices and poor business conditions have stalled the wage rise in some plants; and unless orders pick up substantially in the immediate future, more closings are in the cards.

All finishing plants turned out 7.4-billion yds. of bleached, dyed,

Union Plans Campaign For Northern Contracts

Most New England mills will be starting preliminary skirmishes with the union soon.

This month the Textile Workers Union of America (CIO) holds strategy meetings aimed at the cotton and rayon group, whose contract deadline is April 15, and woolen and worsted mills, whose contracts run out between April 15 and May 1.

Nearly all contracts will be subject to some type of negotiation, either through outright renewal or reopening clauses.

•

Last year Berkshire Hathaway set a settlement pattern based on no direct wage increases but with small gains in fringe benefits.

Bates held out for a wage cut but had to maintain going wages on the basis of an arbitration settlement.

New England mills find the road tougher every year. So the union has no hope for wage increases and will be lucky to hold the status quo.

Wool Use Continues To Slide

Consumption of apparel wool continues to slide.

In November, 1957, U. S. mills used 14.5-million clean pounds, compared with October consumption of 17.8-million clean pounds; and consumption in November, 1956, amounting to 22.1-million clean pounds.

November consumption was the lowest since May, 1938, and reflects the rising use of man-made fibers and a trend to lighterweight fabrics.

Total consumption for the first 11 months of 1957 amounted to 233-million clean pounds, compared with 276.5-million clean pounds consumed during the same period in 1956.

The eleven-month total is also the lowest since 1938 and is about 4% under the 1936-40 average consumption for the eleven-month period.

or printed cotton goods last year—a drop of 7.5% from the 1956 level.

But printed yardage sagged to 1.6-billion yds. for a decline of 14.9%. Bleached goods were off 7% from 1956, and plain-dyed fabrics eased off 2.5% compared with the previous year.

Printers reported last month that so far they have not felt any appreciable rush of business as the result of fewer roller-printing machines in operation.

For Mill Earnings— Modest Rise on Way

There are indications that a turnabout in textile-mill earnings could be on the way.

Last month the Federal Trade Commission and the Securities and Exchange Commission revealed that net profit after taxes for textile-mill products in the third quarter of 1957 jumped to $72-million, compared with $65-million in the second quarter, a gain of 11%.

Second-quarter, 1957, profits had slipped 2% behind first-quarter profits; and the slide in profits from the first quarter of 1957, compared with profits in the last quarter of 1956, amounted to 31%.

The profit trend in textiles compared with a decline of 8% in net profits for all manufacturing industries in the third quarter of 1957 compared with the second quarter of 1957.

A quarterly gain is more significant in textiles than in most other industries because the cyclical nature of textile business does not always justify comparisons with conditions a year ago.

And the two giants of the industry, Burlington Industries and J. P. Stevens, both registered a substantial rise in sales and a modest increase in profits for their last fiscal years compared with the same period in 1956.

•

Both Burlington and Stevens, bellwethers of the industry, are prime examples of diversification. The fact that both companies were able to increase their earnings per share over 1956 partially reflects the advantages of diversification in a wide variety of textile fields.

But diversification is not the whole answer. Good management stands head and shoulders above any other consideration.

Here's what Burlington, the biggest U. S. manufacturer of textiles, was able to do for the year ended Sept. 28, 1957—

• Reached a new sales high of $671-million, which was 5% above 1956. Third- and fourth-quarter earnings were slightly above comparable quarterly earnings a year ago. This gain offset a drop in net operating earnings for the first half of the 1957 fiscal year.

• Reported net operating earnings of $15.3-million, equal to $1.64 per common share, compared to $15.2-million, equal to $1.63 per common share, in 1956.

Thermal-Knit-Underwear Prices Are Lowered

Prices for thermal-knit underwear dropped last month.

New quotations run between $23 and $24 a doz., down from $28 a doz.

The move caught many by surprise because the newcomer to the underwear field has been moving along in better volume than last year.

And most retailers still regard thermal knits as a strong sales factor.

Battle Lines Form On Cotton Policies

Cotton prices were subjected last month to a rash of proposals, plans, and rumors that came from Washington on an almost daily basis.

But the President's farm message at least narrowed down some of the conjecture on what will happen to the 1958 cotton crop, and battle lines are forming in Congress for a new fight to remedy cotton's ills.

The President's 1958 farm program contains these major steps—

• Reduce price-support floors from 75% of parity to 60%

• Eliminate the escalator formula that forces price supports up as soon as surpluses are whittled down

• Permit the Secretary of Agriculture to boost acreage allotments by as much as 50% over the levels set by existing formulas

• Calculate cotton price supports on the basis of the average quality of the crop rather than on a grade that is far below average quality as at present

Mill men hope Congress will act quickly, because they don't want to operate for another year under existing Federal regulations governing the production and sale of cotton.

Optimists hope that new legislation will be enacted in time to affect the 1958 crop, but they may be just whistling in the dark.

Lower Wool Costs Prompt Cut in Carpet Prices

A downward revision in carpet prices started last month.

James Lees touched off the market by cutting prices on both tufted and woven wool carpets by 3%. And Mohasco, the nation's biggest carpet maker, followed with similar reductions.

Lower wool costs made the price cuts possible. Mills are now paying 17% less for most carpet wools than they did last October, when prices reached 1957 highs.

•

Mills hope lower prices will stimulate sales. After several good years of fast running, carpet sales have begun to stumble a bit.

Bigelow-Sanford's sales in the third quarter of 1957 dropped to $16-million, compared with $19-million in the third 1956 quarter.

And lower earnings are close on the heels of falling sales.

Third-quarter, 1957, net profit for James Lees dipped to $918,000 from $1.2-million in the same 1956 period. And Mohasco's third-quarter, 1957, profits fell to $649,000 from $857,000 a year earlier.

Sheet Prices Reduced

Bedsheet and pillowcase prices were slashed from 5% to 11% by leading mills last month.

Cannon, a traditional pace-setter in the sheet market, took the first jump and was followed by such major factors as Pepperell and Lowenstein.

The price cuts came in spite of a rise in cotton costs, and they will intensify an already-sharp profit squeeze at the mill level.

A burdensome inventory problem is largely to blame for lower prices.

Pepperell recently laid off about 70 workers at its Lewiston, Me., plant because of the division's high

• Increased net working capital from $206.8-million to $217.5-million.

J. Spencer Love, Burlington's president, admits 1958 has started in a confusing manner. "Obviously we are facing some downturn from the high level of economic activity of the past four or five years," he said, "but it is our hope that this slowdown will be only a temporary nature and that the fundamental growth factors in our nation's economy will again push our country forward."

But Burlington is understandably wary of close margins and low return on sales and investments. Last April it cut the quarterly dividend from 25¢ to 20¢, where it remains.

Burlington management believes that at least 50% of net earnings should be put back into debt retirement and improvements.

•

And Stevens also reports an enviable record. For the fiscal year ended November 2, 1957, the company—

• Boosted net sales to $417.7-million compared with $372.6-million in the previous year

• Lifted net income to $8.9-million, up from $8.2-million in 1956

• Increased net income per share to $2.21, compared with $2.08 in the previous year

The man-made-fiber division gave the biggest boost to the higher sales volume.

Stevens continues to hold its quarterly dividend rate at 37½¢; and with management mildly optimistic for 1958, this dividend rate should hold.

Stevens' management believes more money will be spent on soft goods this year, a good omen for textile business.

Capital Spending Drops

A drop in mill expenditures for new plant and equipment in the first quarter was predicted last month by the Securities Exchange Commission and the Dept. of Commerce.

Latest estimates put spending for the Jan.-Mar., 1958, period at $68-million, compared with anticipated spending of $82-million in the final quarter of 1957 and actual expenditures of $111-million in the first quarter of 1957.

•

Spending during all of 1957 is expected to be $400-million, unchanged from previous estimates. This figure compares with $465-million in 1956 and $366-million in 1955.

The ratio of money spent by textile mills on new plant and equipment to spending by all industries dropped to 1.1% last year.

In 1947 the ratio was 2.5%, and five years ago it had declined to 1.6%.

Businessmen are confident that the last half of this year will be better than the first half; so mill spending in 1958 might equal the 1955 rate of $366-million.

Car Production Lags— But Tire Prospects Brighten

A fall-off in new-car sales does not lessen the nation's need for tires.

So while tire-yarn producers are apprehensive over new-car prospects, they are encouraged by current forecasts for total tire production this year.

Unlike other suppliers of the auto industry, tire sales do not always stall when Detroit's fortunes idle.

Lack of high-gear demand from auto manufacturers can be made up by brisk and profitable growth in replacement-tire volume.

•

Last month rubber industry leaders guessed anywhere from 110- to 112-million tires would be made in 1958, close to the all-time record in the free-wheeling peak year of 1955.

Still another big boost for 1958 tire volume could come from an increased demand for original and replacement equipment for trucks, buses, tractors, and various off-road vehicles such as construction machines, aircraft, and materials-handling devices.

But such optimism is based on predictions that the downtrend in the first half of the year will be offset by a strong second half.

Right now, though, last month's slow business forced U. S. Rubber to furlough about 1,300 hourly workers at its big Detroit tire plant. But employment will pick up in the spring if demand for tires follows the usual pattern.

•

Expected trends in auto production and tire sales for 1958 will set off further stiff competition between rayon and nylon for a share of the big annual market of about 450-million lbs. of tire cord.

Nylon yarn continues to chew away at rayon's share; and if 1958 works out as expected, nylon stands to lop off another slice at the expense of its arch-rival.

Rayon has a virtual stranglehold on original-equipment tires. But new-car production is expected to fall well below 6-million units this year, compared with output of over 6.1-million units last year.

Nylon has come up fast in replacement tires, where it now has about 40% of the market. And replacement-tire output is expected to climb to 58.5-million units in 1958, compared with 56.5-million units in 1957 and 53.2-million units in 1956.

Also, aircraft and heavy off-the-road tires have already adopted nylon as standard cord.

But nylon still has far to go in the tire-cord market. Last year nylon pushed its share to about 85-million lbs., up from 61-million lbs. in 1956.

Nylon hopes to have about 150-million lbs. of the tire-cord market this year, but rayon forces are more determined than ever to keep nylon off the next rung.

inventory. Most of the workers were in the sheet plant.

And last month Commander Mills cut production from a five-day week to a four-day week because of lagging sheet and pillowcase sales. Commander's vice president described the cutback as "the first in my memory."

•

Price competition on sheets at the retail level was unusually tough during last month's traditional white sales, with the Type 180 and Type 128 the hardest hit.

But sales volume was encouraging, and most stores expected to come out on a par with last year's figures for the month.

Spring white sales, a retailing "must" in many cities, may be on their way out.

A National Retail Merchants survey shows that 70% of the merchants participating contend that the May sales are unprofitable.

Their reasons: Business doesn't increase enough to offset markdowns, and much of the volume is borrowed from the summer.

Drought Reduces Size Of Australian Wool Clip

Melbourne—A new estimate of the size of the Australian wool clip shows a sharp drop over earlier predictions.

The latest estimate puts the clip at 1,463-million lbs. of greasy wool, compared with the original estimate of 1,603-million lbs.

The new estimate is 102-million lbs. less than last year's record production.

The decline in total production was caused by drought in New South Wales, South Australia, and Western Australia and will be mostly in shorn wool.

The reduction in the clip is being accompanied by a fall in prices, which are running at a level of about 17.5% below last season's prices.

New Life for Housing?

Home builders and buyers report mortgage financing is becoming easier to get.

This trend is being closely watched by mills with a stake in the home-furnishings market because it provides part of the answer to housing activity this year.

Most economists feel that easier credit in general, and the Federal Housing Administration's lower credit standards in particular, will speed lagging housing starts and help offset recessionary trends.

New credit conditions increase the attraction of the underwritten mortgages for investors, who in times of tighter credit don't want this paper because of its rigid interest-rate ceilings.

Private housing starts in 1957 totaled 989,700, dropping below the million mark for the first time since 1949. And the 1957 total was 10% less than in 1956.

But textile men, looking for an increased slice of business from new homes, are tempering their optimism with these hard facts—

- A return to something like the 1.3-million housing starts of 1955 is unlikely.
- Best guess now is for 1958 to produce slightly over 1-million houses, perhaps about 6% better than the 1957 total.
- New family formation will not rise very much until around 1960, when a sharp upturn should occur to reflect the jump in the birthrate of 1940.
- Demand-and-supply forces, other than easing of credit, must be taken into consideration. And these forces are less favorable now than they have been in recent years.

Housing trends are of vital concern to the textile industry and fiber producers.

Take American Viscose for example.

Back in 1946 the big man-made-fiber producer shipped two-thirds of its sales to apparel markets. Now its sales are only 40% to apparel markets, 23% to industrial uses, and 37% for household requirements.

Most important for American Viscose and other yarn producers is the revolution in carpeting that has seen output of all types of tufted floor covering jump from 21-million yds. in 1951 to a current annual rate of about 94-million yds.

Another boost to household-textile consumption has been the trend to home ownership. The percentage of dwelling units occupied by owners has increased progressively from 44% in 1940 to 55% in 1950 and 60% in 1956.

"This trend helps us a lot," says Harry Dalton, vice chairman of American Viscose, "for the home owner ordinarily has a more-intimate concern in household maintenance than one who rents."

And carpet manufacturers, of course, watch housing developments closely.

A slide in carpet sales for some mills last year is blamed in part to fewer family formations as the result of fewer births

TWUA Would Like To Gobble Harassed UTW Locals

The Textile Workers Union of America (CIO) was conducting a subtle membership raid last month.

The victim is the much-maligned United Textile Workers of America (AFL).

The parent AFL-CIO would like to see the two rivals merge into one big textile workers' union, but TWUA thinks it can accomplish this end faster and to its own advantage if it could gobble up UTW now.

Last month TWUA failed to renew its participation in the AFL-CIO no-raid pact; so it is free to chase down all UTW members.

•

Both unions are in weakened condition and could do with each other's help. But bitter rivalry has killed previous attempts to get the two unions together, in spite of strong prodding from AFL-CIO officials.

TWUA has seen its membership sag from an estimated 361,970 members in 1955 to 285,000 members last year and would like to grab off UTW's 40,000-odd members.

UTW has its back to the wall as the result of having to fire its president and secretary-treasurer after unfavorable publicity arising from charges of misuse of union funds.

Right now UTW is operating under an AFL-CIO monitor who will preside over a housecleaning convention fixed for the middle of next month.

Retail-Piece-Goods Sales Expected To Show Increase

Growth opportunities in the sale of piece goods at the retail level were outlined at last month's annual meeting of the National Retail Merchants Association (formerly the National Retail Dry Goods Association).

Retail-piece-goods sales have shrunk in volume since 1948, but there are signs that the decline can be reversed this year:

during the 1930's and the increased cost of money for new home construction.

But last month carpet manufacturers were optimistic over long-range prospects.

Typical was Joseph Eastwick, president of James Lees & Sons. "The first half of the 1960's looks to be unusually favorable," he said, "when household formations expected by that time should be two-thirds greater for those years than the currently prevailing formations."

• In the current period of economic adjustment, fewer women will be working and more time for sewing should be available. And there will be increased emphasis on economy, again favoring home sewing.

• Sewing classes in schools are instilling the sewing habit in millions of teenagers, and enrollments are expected to rise sharply in the next few years.

For example, over half of the nation's girls in the 14-to-19 age group (4½-million out of a total of 8-million) attend clothes-making classes.

And about 5½-million of these girls made 17-million garments last year out of 50-million yds. of fabric.

This particular market holds promise of a healthy increase by 1965, when the 14-to-19 age group will reach a total of 12-million girls.

Colors Lean to Dark Shades

Colors for men's suits next fall continue to lean to the dark side.

Fabric buyers report the dark grays, blues, and browns are leading the parade so far, with dark browns gaining slightly over gray.

Stripes and herringbones dominate the pattern trend.

Mill Failures Rise

Failures of textile mills in 1957 increased 7% as compared to 1956, according to Dun & Bradstreet. But liabilities declined 16%.

Total failures for the year among textile manufacturers came to 93, with liabilities of $10,432,000.

Manufacturers of apparel and other finished textile products showed a decline both in total failures and in liabilities.

Failures decreased 9% from 450 in 1956 to 403 last year, with liabilities down from $24,104,000 to $21,636,000.

Reserve Board Acts To Stem Business Slide

Dramatic moves continued to spotlight the money market last month as more steps were taken to halt deflationary trends.

As a result, mills will find themselves paying less for bank loans and factoring charges.

Here's what's been happening to money rates since the Federal Reserve Board switched from a tight-money policy to one of easier credit—

• Last November member banks of the Reserve Board cut the discount rate from 3½% to 3%, thereby laying the groundwork for trimming the cost of borrowing money by businessmen and consumers.

• Last month the discount rate fell again, going from 3% to 2¾%, touching off a reduction in the prime interest rate—that levied by banks on their best credit risks—from 4½% to 4%.

• Factoring rates began to ease off from 7% back toward the traditional 6% charge.

• Stock-margin requirements were reduced from 70% to 50% by the FRB last month in another strong action designed to turn the tide of business recession.

•

For textiles, problems of the last two years have not been so much concerned with tight money and high rates but rather with too much production, poor prices, and lagging sales.

But any move by money managers that tends to pump new life into the economy is obviously looked upon with favor by mill men. Business is now being increasingly encouraged to undertake new enterprises with borrowed money as interest rates fall.

At 2¾%, the discount rate is the lowest it has been since the late summer of 1956, when it went from that level to 3%. In August, 1957, it was raised again from 3% to 3½% and remained there until last November's reduction.

A more dramatic step to bolster business will come if the Federal Reserve Board increases the nation's supply of bank credit by reducing bank reserve requirements.

The exact timing of such a move was not known last month, but it can be expected soon if business conditions do not take a sudden turn for the better.

Paper Hopes To Capture More Textile Markets

Paper continues to nose its way into traditional textile markets.

Its success in towels and bags is well established, and now paper is out after the garment field.

In recent months two companies have developed paper products that they feel can be used in such items as work clothes, industrial aprons, medical gowns, factory smocks, infants' wear, and children's dresses.

•

One company, the Scott Paper Co., calls its product Dura-Weve.

It is made by laminating rayon scrim with two or more plies of high-wet-strength paper. Polyethylene can also be used for one of the plies.

According to Scott, Dura-Weve can be made to drape.

Cincinnati Industries has used its paper product X-Crepe to make an experimental suit. The paper features a printed herringbone pattern.

•

According to Institutional Products Corp., buying trends point to significant changes in hospital purchases of textiles.

Main reason for the change: Emphasis on labor saving on account of personnel problems in many hospitals.

The problem is leading to an increasing replacement of traditional textile fabrics with disposable paper or nonwoven products.

Japanese Will Build Wool Mill in Brazil

Tokyo—Kurashiki Spinning Co. of Osaka will shortly set up a 5,600-spindle woolen mill in Brazil.

The new company, to be named Lanificio Kurabo do Brasil Ltda., will be established in Porto Alegre in the state of Rio Grande do Sul.

The mill should be completed early in 1959.

ODM Sees No Threat In Wool-Fabric Imports

Imports of wool fabrics are currently running 7% of U. S. wool-fabric production, but they pose no threat to the national security.

Defense Mobilizer Gordon Gray came to this conclusion last month when he rejected pleas by U. S. wool mills for further restrictions on foreign shipments.

These mills are also fighting for White House continuation of the Geneva Reservation, which permits tariff rates to rise from 25% to 45% when imports reach 5% of domestic production in any one year.

This figure was reached in July of last year. Then at the end of the year the tariff rate reverted to 25%.

Woolen and worsted mills presented their case for added import protection before ODM last summer under the so-called defense-essentiality provisions of the trade laws administered by ODM. But even then the mills seemed headed for little sympathy from the government.

Gray revealed that an interim Department of Defense estimate shows that military mobilization needs, as currently computed, have dropped to levels less than half of those formerly indicated to be necessary in an emergency.

And at recent hearings before the State Department's Committee for Reciprocity Information under the trade-agreements law, U. S. wool-fabric manufacturers asked for continuation of the present temporary tariff quotas on imports. The tariff quota is now under review by the White House.

The Administration is expected to continue as much tariff protection for domestic industry as it feels necessary, particularly in face of the strong protectionist opposition it will come up against in Congress this year over renewal of the basic trade-agreements legislation.

But the wool tariff quota is regarded in Washington as a temporary device that will eventually be reduced or abolished.

India's Textile Industry Eyes Bigger Markets

India's influence on world textile markets is growing fast.

While imports of Indian textiles into the U. S. are negligible (except for jute goods), events of recent months prove that India's position in textile markets will have increasing repercussions here.

U. S. textile manufacturers have been mostly watching from the sidelines, and here's what they've seen—

- India has flooded Britain with cheap cotton piece goods.
- Japan could bow out as the world's leading cotton-goods exporter to make way for India.
- Textile exports are India's chief source of earning foreign

exchange, and every means is being used to step up foreign trade in order to ease balance-of-payment difficulties.

• India's textile industry is being expanded and modernized by means of special deferred-payment arrangements with East Germany and other countries.

There is no doubt but what India would like to expand cotton-fabric shipments to the U. S.

India has improved the strength and quality of her cotton fabrics and some observers predict that she could flood the U. S. with coarse cotton fabrics and yarns.

India's exports are mostly short-staple-cotton fabrics, but observers believe that if India really got going she could create a good-sized market in the U. S. for cotton print cloths.

Right now it's the global implications of India's position that loom most important.

India is giving Britain a big headache by shipping large yardages of cotton cloth to the United Kingdom. And at the same time she is nibbling away at Britain's former export markets.

Japan also has reason to fear India.

India's exports are running close to 800-million yds. a year. And Japan has pushed her exports of cotton cloth to 1,400-million yds. a year.

But India wants to shove her exports to more than 1,000-million yds. a year if she can, and in the process some major adjustments in world markets will take place.

Good Stock Prospects

At their prevailing reduced prices, textile shares could prove interesting, based on prospects of future improvement in operating results.

The latest issue of *The Value Line* supports this theory and points out that textile stocks have the potentiality of above-average capital gain three to five years from now.

Here's how *The Value Line* sizes up prospects for four leading mills in a larger economy hypothesized for 1961-63—

Burlington—Sales at $850-million; earnings $2.60 a share. Projected dividends of $1.25 a share would command an average price of 20 (7.7 times earnings).

Cannon—Sales at $250-million; earnings $6.65 a share. Projected dividends of $4 would command an average price of 66 (9.9 times earnings).

Lowenstein—Sales at $400-million; earnings $4.15 a share. Dividends of $1.90 would command an average price of 31 (7.5 times earnings).

Stevens—Sales at $520-million. Dividends of $2.30 a share would command an average price of 38 (11.2 times earnings of $3.40 a share).

Commercial Finance Plan Includes Carpets and Rugs

A new twist has been added to the merchandising of commercial furnishings, including carpets and rugs.

Four major manufacturers have teamed together to offer a package finance plan for the purchase of complete furnishings for commercial installations like hotels and motels.

Manufacturers included in the package are: C. H. Masland, carpets and rugs; Heywood-Wakefield, furniture; Simmons, mattresses; Philco, television, radios, and air conditioners.

Canada Wants To Curb U. S. Textile Imports

Some action by the Canadian government to curb shipments of U. S. textiles into Canada is expected within the next month or two.

At stake is the biggest single export market for U. S. cotton cloth.

Canadian mills have been closing down and laying off workers while shipments of U. S. cotton cloth into Canada have been booming.

What rankles most is the fact that some U. S. textiles allegedly circumvented Canadian dumping laws and were landed at prices with which the Canadian industry couldn't begin to compete.

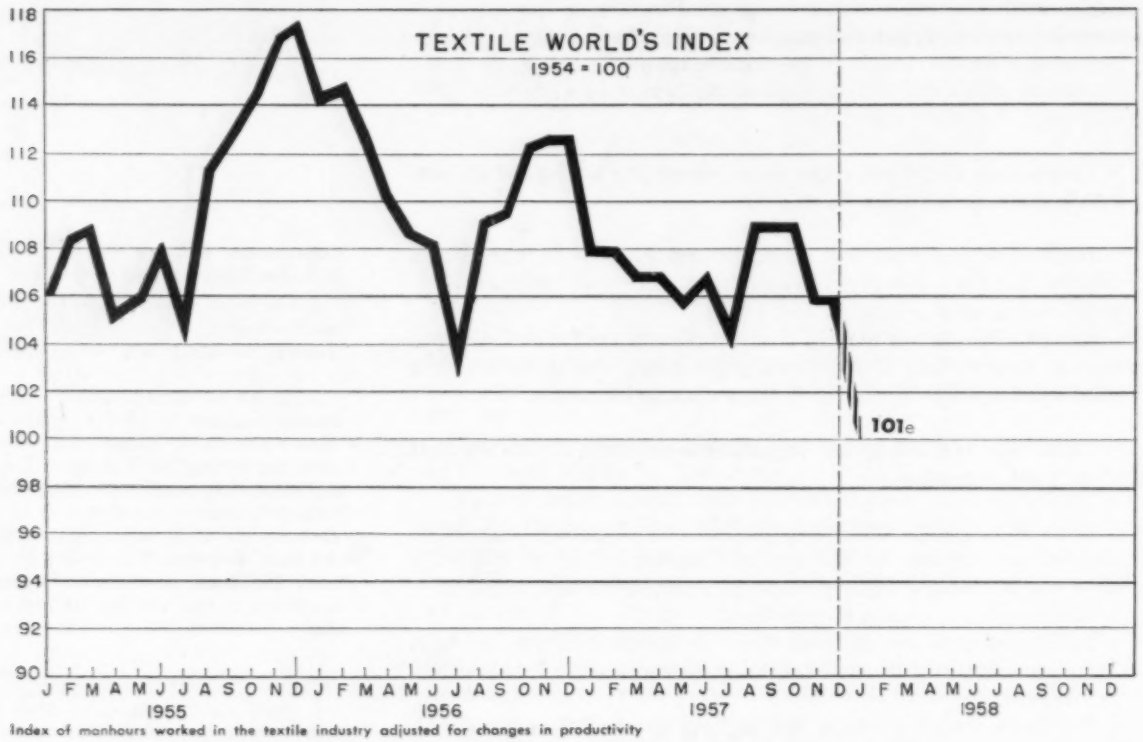
And Japanese and other imports are adding the final blow.

•

Last September, the new Progressive Conservative Government called for a full-scale hearing on 168 textile tariff items.

A hearing has already been held on woolen and worsted items, and the Tariff Board's recommendations will be announced soon.

Cotton yarn and cloth tariff items come up for hearings in Ottawa on March 26, and a large delegation of U. S.-cotton-goods manufacturers and exporters is expected to attend.



Index of manhours worked in the textile industry adjusted for changes in productivity

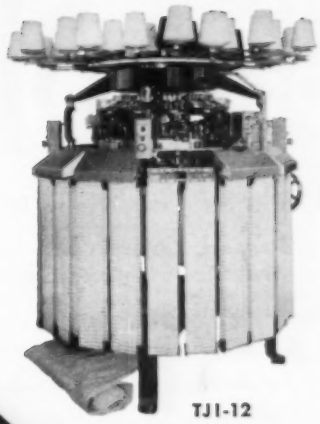
Textile World's Monthly Indicators

	Latest Month	Previous Month	Year Ago
Textile World's Index (1954 = 100)	**101**	**106**	**108**
Employment (thousands) B.L.S.	978.1	984.9	1521.8
Production Workers (thousands) B.L.S.	886.4	893.0	947.8
Weekly Earnings B.L.S.	$58.20	$58.14	$60.30
Hourly Earnings B.L.S.	$1.50	$1.51	$1.50
Weekly Hours Worked B.L.S.	38.8	38.5	40.2
Production Index (1947–1949 = 100) F.R.B.	91	97	98
Wholesale Price Index (1947–1949 = 100) B.L.S.	94.9	95.0	95.6
Manufacturers' Sales (million $) Commerce	1,018	1,029	1,109
Manufacturers' Inventories (million $) Commerce	2,639	2,625	2,674
Inventories to Sales Ratio	2.59	2.55	2.33
Exports (Million $) Commerce	130.7	108.6	151.9
Imports (Million $) Commerce	82.9	86.0	92.0
Stock Price Index (1941–1943 = 10) Standard & Poor's	17.30	17.54	23.14
Failures (number) Dun and Bradstreet	13	5	2

National Economic Indicators

	Latest Month	Previous Month	Year Ago
Industrial Production (1947–1949 = 100) F.R.B.	136	139	147
Consumer Prices (1947–1949 = 100) B.L.S.	121.6	121.1	117.8
Wholesale prices (1947–1949 = 100) B.L.S.	94.9	95.0	95.6
Population (millions) Census	169.9	169.6	166.7
Unemployment (thousands) Census	3.4	3.2	2.5
Employment (millions) Census	64.4	64.9	64.6
Personal Income (billion $) Commerce	342.8	345.4	334.8

SWEATERS FIT THE OCCASION



TJI-12

Whether it be on the golf links – for business or evening wear . . . sweaters are fashionable accessories in any wardrobe.

A variety of styles knitted in either synthetic or natural fibers make fine sweaters acceptable all day long.

The Circular Jacquard TJI-12, fully automatic circular knitting machine, offers the largest pattern range of knitted fabrics. Knit-on cuffs are a quality feature and pattern cards permit any design regardless of length, width or placement.

Additional mechanical features make the TJI-12 the most versatile knitting machine in the outerwear field today.*

For complete information write:

WILDMAN/JACQUARD

a subsidiary of Draper Corporation, Hopedale, Mass.

WILDMAN JACQUARD CO.
1210 Stanbridge St.
Norristown, Pa.

All day long . . .
sweaters belong!

**Half hose illustrated were knitted on a Hemphill BANNER machine . . . another quality Wildman Jacquard product.*

1958 SpinSaVac®

Unit Collection Cabinet (Type HI)

Compact, starter on side, full access to motor alley

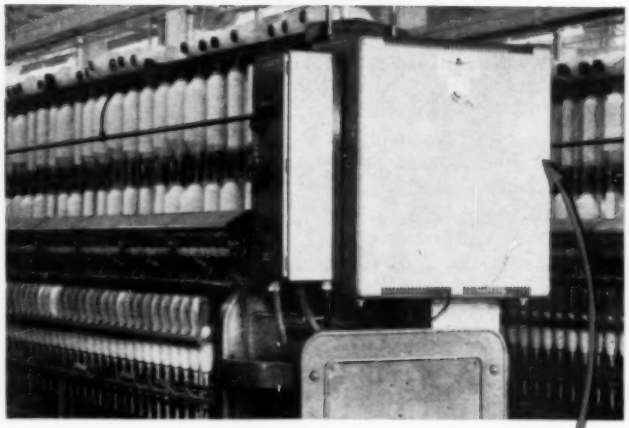
Flush surfaces

Large conical screen—fine mesh saran

Ample volume for collected lint

Large door for easy lint removal—air tight gasket locked without gluing

Air exhausted—up, down, or both—at low velocity, well diffused



Central Collection (alternate, not shown)

With provision for exhausting or returning room air

Clearing Conduit

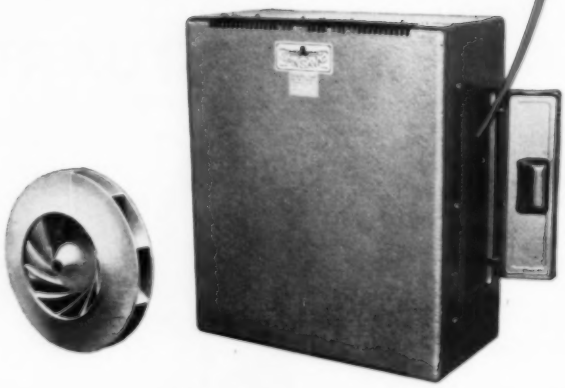
Thick-walled, smooth, ethyl-cellulose

Strong, rigid, non-warping

Spring mounted

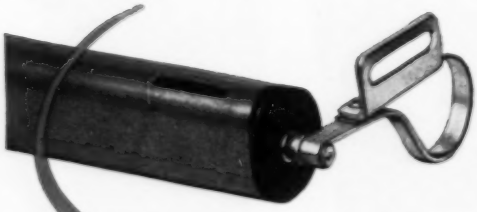
Pear-shaped for accurate positioning and easy piecing up

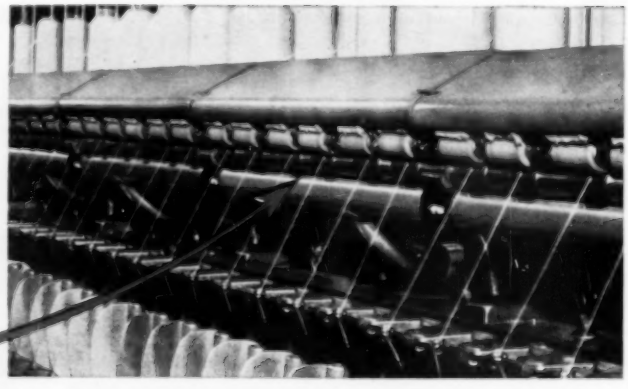
Conduits on frame interchangeable without adjustment



Vacuum Impeller

Double-shrouded air foil type, for greater efficiency and higher vacuum





Write or 'phone for further information about SpinSaVac and SpinSaCreel

Parks-Cramer Company

FITCHBURG, MASS. CHARLOTTE, N. C. ATLANTA, GA.

402

Ames Textile Corp., Lowell, Mass., has bought Sutton's Mills, North Andover, Mass.

Cleveland Cloth Mill, Shelby, N. C., has begun building a 32,000-sq.-ft. additional warehouse for cloth storage.

Cluett-Peabody & Co., New York, N. Y., has sold its mill building in North Grosvenor Dale, Conn., to the Gansett Co., Pawtucket, R. I., at a price of $375,000.

Dana Warp Mills, Westbrook, Me., has closed. The plant has been placed on a stand-by basis.

Firth Carpet Co., Firthcliffe, N. Y., has announced that it plans to construct a $2½-million expansion of its Burnsville, N. C., plant.

Graham Mfg. Co., Laurens, S. C., is the name of a new multi-million-dollar textile plant that will employ 500 persons. Plans call for completion by the end of June.

Hohokus Bleachery, Inc., Hohokus, N. J., has been purchased and will operate as Dalebrook Finishing Co. The plant, which contains 29 dyeing machines, will be modernized and a new compressive shrinker added.

Lakeside Mills, Guntersville, Ala., has been sold to William L. Barrell Co., Huntsville, Ala. The mill had employed 295 people with a weekly payroll of about $15,000. The Barrell Co. has moved some of the equipment to its other plants. Other equipment and the plant itself have been put up for sale.

Leward Cotton Mills, Worthville, N. C., has announced a $350,000 modernization plan. The latest improvements will bring spinning operations up to the level of modernization in the weaving room. Air conditioning in the spinning room will be completed, and new equipment will be installed in the carding and spinning departments.

Lowenberg Knitwear Co., Brooklyn, N. Y., has held a liquidation sale of its knitting, pressing, sewing, and finishing equipment.

Merrimack Mfg. Co., Lowell, Mass., plans to cease operations by June. The company, which manufactures mostly velveteen and corduroy, employs 1,000.

Munsingwear, Inc., Minneapolis, Minn., and Northrup King & Co., a seed company, also of Minneapolis, have combined merchandising efforts for a spring promotion. Munsingwear will break with a promotional campaign in March, featuring its nylon "Petunia Petticoat" with a petal-shaped front panel, floral lace, and two petunia appliques. At the same time, Northrup King & Co. will start promotion in four national magazines with "Petticoat Petunia" ads.

Safie Mfg. Co., New York, N. Y., will close its East Rockingham, N. C., plant for an indefinite period. The mill manufactures broadcloths, sheetings, and print cloths.

Shannon Hosiery Mills, Inc., a subsidiary of Chadbourn-Gotham, Inc., Columbus, Ga., has appointed Frank G. Binswanger, Inc., agents for the sale or lease of its one-story plant. The brick and steel building, containing about 45,000 sq. ft., has concrete and wooden floors. It is air conditioned and fully sprinklered and has two off-street loading docks.

Shelley Knitting Mills, Philadelphia, Pa., has announced the introduction of a Ban-Lon knitted line of creepers for infants.

E. J. Snyder & Co., Ware, Mass., has started building a plant at Albemarle, N. C. The plant will employ about 100 persons.

Stafford Worsted Co., Stafford Springs, Conn., has been bought by Linatex Corp. of America, Rockville, Conn. Transfer of operations from Rockville to Stafford Springs will be made as soon as renovations can be completed.

Stowe Spinning Co., Belmont, N. C., is installing six Long-Draft 10x5 roving frames with 120 spindles each, purchased from Whitin Machine Works. Forty spinning frames, involving a total of 10,880 spindles, are being converted to Whitin Super-Draft.

Union Yarn Mill, Jacksonville, Ala., has started construction of a third building where about 65 people will be employed. The new mill will produce yarn for sweatshirts.

United States Rubber Co., New York, N. Y., has shown for the first time a greatly expanded line of Trilok upholstery fabrics, which included new patterns, textures, and colors in the medium-priced brackets. They were shown at the International Home Furnishing Market of the Merchandise Mart, in Chicago, Jan. 6 to 17. The new fabrics come in a wide range of popular decorator colors with accent on oyster, beige, brown, and blue shades. The patterns, which bear such names as Drift, Diamond Tones, Poplar, Bamboo, and Persian, were designed by Lenor Larsen.

Waldrich Co., Delawanna, N. J., has bought a complete resin-finishing range and four dyebecks from Richmond Piece Dye Works, Richmond, Va. Plant capacity will be increased by 80,000 yds. per day with the new equipment, which will enable Waldrich to process any kind of fiber and all types of blends.

Wauregan Mills, Inc., Daniel, Conn., plans to discontinue its production of shirting and dress goods and sell its machinery and real estate.

Westbury Knitwear Co., New York, N. Y., has purchased Eureka Knitwear Mills, Inc., Hickory, N. C. Eureka Mills has operated as a separate but sister corporation of G & H Hosiery Co., Inc. The brand name, Elroc, produced by Eureka Knitwear Mills, Inc., was not included in the purchase.

CALENDAR

February

AATT, Della Robbia Room, Vanderbilt Hotel, New York, Feb. 5.

American Society for Quality Control, Administrative Applications Div., Carter Hotel, Cleveland, Ohio, Feb. 7 & 8.

1958 Cotton Research Clinic, Pinehurst, N. C., Feb. 12 to 14.

AATCC, Midwest Section, Hotel Bismarck, Chicago, Ill., Feb. 15.

March

AATT, Della Robbia Room, Vanderbilt Hotel, New York, N. Y., March 5.

Textile Quality Control Association, spring meeting, Poinsett Hotel, Greenville, S. C., March 6 & 7.

Southern Textile Methods & Standards Association, spring meeting, Clemson House, Clemson, S. C., March 13 & 14.

American Society for Testing Materials, Committee D-13, spring meeting, Sheraton-Park Hotel, Washington, D. C., March 18 to 21.

American Society of Mechanical Engineers, Textile Engineering Conference, North Carolina State College, Raleigh, N. C., March 20 & 21.

AATCC, Hudson-Mohawk Section, Johnstown, N. Y., March 28.

April

Cotton Merchandising Research Clinic, annual meeting, Univ. of Texas, Austin, Tex., April 10 & 11.

American Cotton Manufacturers Institute, annual convention, Hollywood Beach Hotel, Hollywood, Fla., April 10 to 12.

AATCC, Piedmont Section, Washington Duke Hotel, Durham, N. C., April 11 & 12.

Alabama Textile Manufacturers Association, annual meeting, Buena Vista Hotel, Biloxi, Miss., April 16 to 18.

AATCC, Midwest Section, Netherland Hilton Hotel, Cincinnati, Ohio, April 19.

National Association of Hosiery Manufacturers, annual meeting, Hotel Roanoke, Roanoke, Va., April 21 & 22.

Cotton Manufacturers Association of Georgia, Boca Raton Hotel & Club, Boca Raton, Fla., April 23 to 26.

Phi Psi Textile Fraternity, annual convention, Philadelphia, Pa., April 24 to 26.

Fiber Society, Inc., spring meeting, Clemson House, Clemson, S. C., April 30, May 1.

May

Underwear Institute, annual meeting, Hotel Biltmore, New York, N. Y., May 1.

Alabama Textile Operating Executives, spring meeting, Thach Auditorium, Auburn, Ala., May 2 & 3.

Canadian Textile Conference, Queen Elizabeth Hotel, Montreal, Que., May 6 to 8.

AATT, Della Robbia Room, Vanderbilt Hotel, New York, N. Y., May 7.

June

Materials Handling Exposition, Public Auditorium, Cleveland, Ohio, June 9 to 12.

September

The Fiber Society, Inc., Montreal, Que., Sept. 9 & 10.

AATCC, Piedmont Section, Hotel Charlotte, Charlotte, N. C., Sept. 19 & 20.

October

National Cotton Council, Chemical Finishing Conference, Washington, D. C., Oct. 1 & 2.

Southern Textile Exposition, Greenville, S. C., Oct. 6 to 10.

Textile Recorder International Textile Machinery & Accessories Exhibition, Belle Vue, Manchester, England, Oct. 15 to 25.

Alabama Textile Operating Executives, fall meeting, Thach Auditorium, Auburn, Ala., Oct. 25.

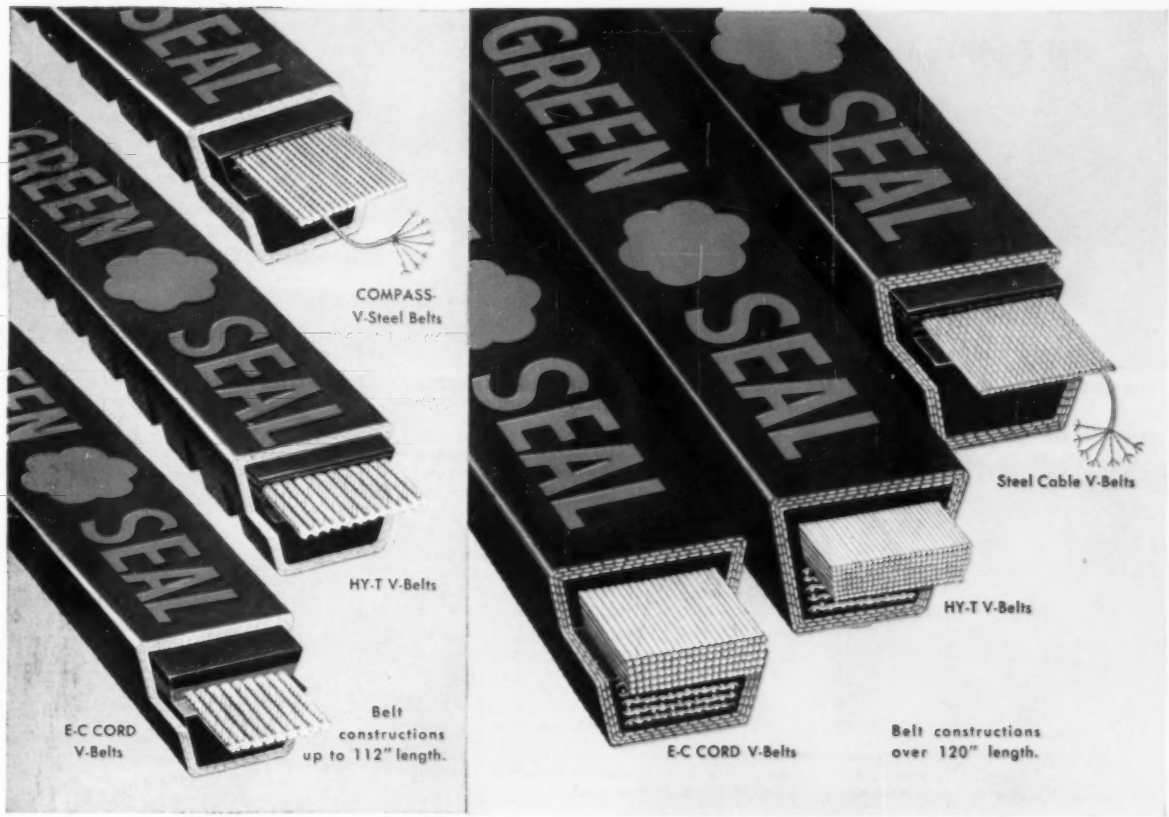
AATCC, national convention, Hotel Conrad Hilton, Chicago, Oct. 30 to Nov. 1.

November

Textile Seminar (sponsored by University of Georgia, Div. of Clothing and Textiles in Extension, Teaching, Research), Georgia Center for Continuing Education, Athens, Ga., Nov. 7 & 8.

Do you know the inside story of

V-Belts with the Green Seal?



Until recently dimensional stability was possible only in V-Belts with steel load-carriers as developed by Goodyear. But now you can have that stability in a complete line of belts – thanks to the development of Triple-Tempered (3-T) cord–synthetic cord tempered by Tension, Temperature and Time.

What's your pay-off from this dimensional stability?

When you're belting multiple drives, it's your one guarantee that every set of matched belts will *really* match. No matter how long you store them, they'll *stay* matched, too.

And once they're installed, you've got belts designed and built to work as a perfect team–without individual belts either "loafing" or overworking. In fact, you're protected from all the usual mismatching headaches that also include slipping, stretching, scorching.

In other words, you're belted for maximum trouble-free horsepower hours at minimum cost. There's no substitute for that kind of performance – or for the V-Belts with the Green Seal that give it to you – every time.

So see your dealer about the V-Belts with true dimensional stability–the V-Belts with the Green Seal. Or write Goodyear, Industrial Products Division, Lincoln 2, Nebraska, or Akron 16, Ohio.

DIMENSIONALLY STABLE V-BELTS
with the GREEN SEAL by

GOODYEAR

THE GREATEST NAME IN RUBBER

Compass, E-C Cord, Hy-T, Green Seal–T.M.'s The Goodyear Tire & Rubber Company, Akron, Ohio

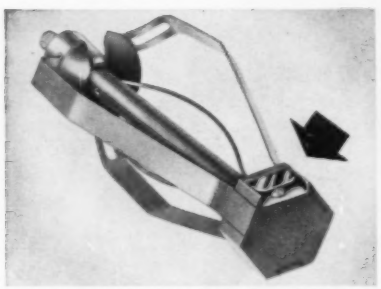
Watch "Goodyear Theater" on TV – every other Monday 9:30 P.M., E.S.T.

For more data, write this page number on Reader-Service card. →

HOW McBRIDE COMPONENTS CAN MODERNIZE OLDER CREELS

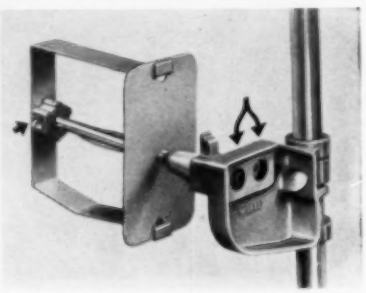
Now you can have modern, low-cost creels without the capital investment necessary to purchase complete new creel units. McBride creel components give high quality production even on older creels.

HERE ARE THE LATEST DEVELOPMENTS:



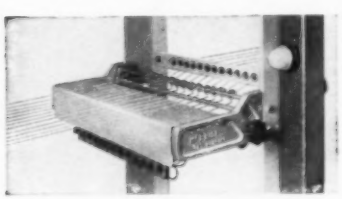
McBRIDE QUIK-CHANGE CONE HOLDER

Quik-Change Cone Holder. Fits over bowed spring spindle—accommodates complete range of cone tapers.



McBRIDE QUIK-CHANGE LARGE DIAMETER TUBE OR PIRN HOLDER

Famous McBride Swing Arm Assembly fits any ⅞" diameter upright. This assembly has recently been redesigned for even greater rigidity and strength.

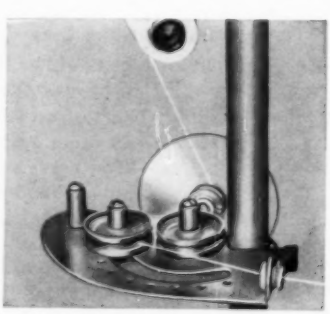


Instant-Stop. Sealed mercury switch gives instant positive action on all yarns from 12 denier nylon to tire cord, etc. Cast-out of individual ends by switch control.

Stop-motion indicating lights provide 3-way control: satisfactory operation—LIGHT OFF, broken end—LIGHT ON, drawing-in position—LIGHT BLINKING. New switching system lights only the light at bank where broken end occurs.

Stop Motion in operating position. Colored button controlling entire bank is on: 3 individual switches controlling 3 drop wires on off position for 3 inactive ends. Note cast-out ends may remain threaded through drop wires.

McBRIDE TENSION-MASTER



McBride Tension-Master. New 3 post tension provides full range of tensions. Adaptable to any diameter upright member. McBride Tension-Master permits yarn to be evenized at the beam.

Write today for details on how to adapt these components to your existing creels.

Let McBride Study Your Warping Situation. You Might Be Surprised With The Costs You Can Save, The Improved Quality In The Warps You Produce.

CREELS for every purpose, CONE HOLDERS, STOP MOTIONS, TENSION CONTROLS, WARP BEAMS, FLANGES, CARPET INSPECTION TABLES, METAL AND WOOD ROLLS. COMPLETE ENGINEERING SERVICE IS PART OF EVERY McBRIDE INSTALLATION.

McBRIDE COTTMAN AVE. & WISSINOMING ST. PHILADELPHIA 35, PENNSYLVANIA

In Canada: Hugh Williams & Co., 27 Wellington St., E. Toronto 1, Ontario

Letters From Readers

We welcome your comments. Whether you agree or disagree, with us or anybody else, we will be glad to have you air your views.

Unless you ask us not to, we will use your name and company connection when your letter is printed. If you prefer to have your opinion appear unsigned, we will respect your confidence by using only a set of initials.

Write to Editor, Round Table, TEXTILE WORLD, 201 E. Coffee St., Greenville, S. C.

THERE ARE TWO KINDS OF DIRECT SPINNING

Dear Editor:

Your article on direct spinning [TEXTILE WORLD, July, '57, p. 66] was of great interest. We infer that your reference to direct spinning deals with the sliver-to-yarn process.

However, the term direct spinning has been generally adopted for the tow-to-yarn process by Stains, Rieter, Saco-Lowell, and our company. We fear that your use of the term direct spinning may create confusion among the technologists as well as the industrialists concerned. There should be a distinction between the two processes—tow-to-yarn and sliver-to-yarn.

Y. OGAWA
Chief of Textiles Dept.

Toho Rayon Co. Ltd.
Tokyo, Japan

[This question about correct terms was referred to an expert in the field. His opinion is expressed in the letter that follows.—EDITOR]

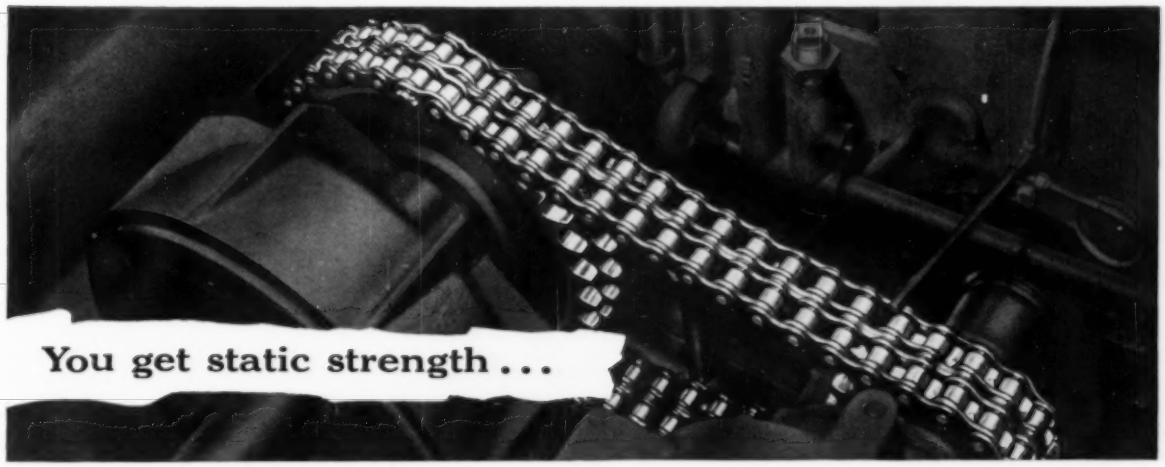
Dear Editor:

I agree with the Japanese reader about the incorrect designation in the article on direct spinning. We have used the term "can spinning" in the past because the creel of the spinning frame was sliver cans.

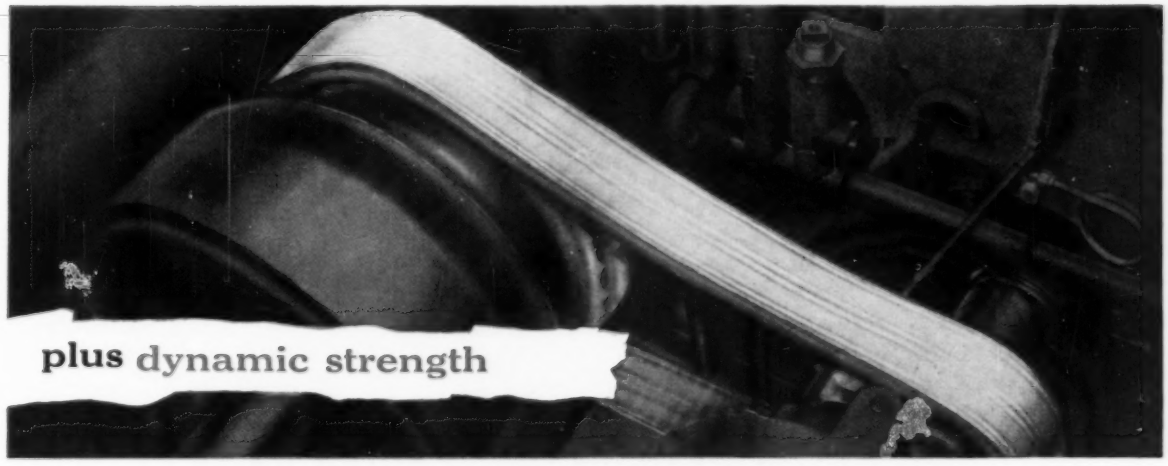
[This method should not be confused with "pot spinning" because pot spinning refers to the receiving element in which the yarn is placed in a pot-shaped receptacle by centrifugal

CONTINUED ON PAGE 20

Why tough-service drive and conveyor jobs demand LINK-BELT roller chain



RESISTANCE TO TENSILE STRESS is achieved with properly heat-treated, accurately machined side bars made of premium steel and fitted with properly hardened pins, bushings, rollers.



STRENGTH OF CHAIN IN MOTION results from such refinements as pitch-hole preparation, micro-finish of parts, special processing of side bars, pre-lubrication, rigid quality control.

THE *greater dynamic strength* found in Link-Belt precision steel roller chain is essential for long life on today's harder-working drives and conveyors. This added capacity to resist shock loads, centrifugal loads and similar stresses is achieved only because Link-Belt adds refinements in manufacture.

These include lock-type bushings, shot-peened rollers, pre-stressing, closer heat-treat control. The result: a precision chain that takes stresses in stride . . . provides smoother, more efficient performance that measurably outlasts ordinary roller chain — reduces costs.

For full data on Link-Belt roller chain, see your Link-Belt office or authorized stock-carrying distributor.

LINK-BELT

ROLLER CHAIN & SPROCKETS

LINK-BELT COMPANY: Executive Offices, Prudential Plaza, Chicago 1. To Serve Industry There Are Link-Belt Plants, Sales Offices, Stock Carrying Factory Branch Stores and Distributors in All Principal Cities. Export Office, New York 7; Canada, Scarboro (Toronto 13); Australia, Marrickville (Sydney), N.S.W.; South Africa, Springs. Representatives Throughout the World. 14.472

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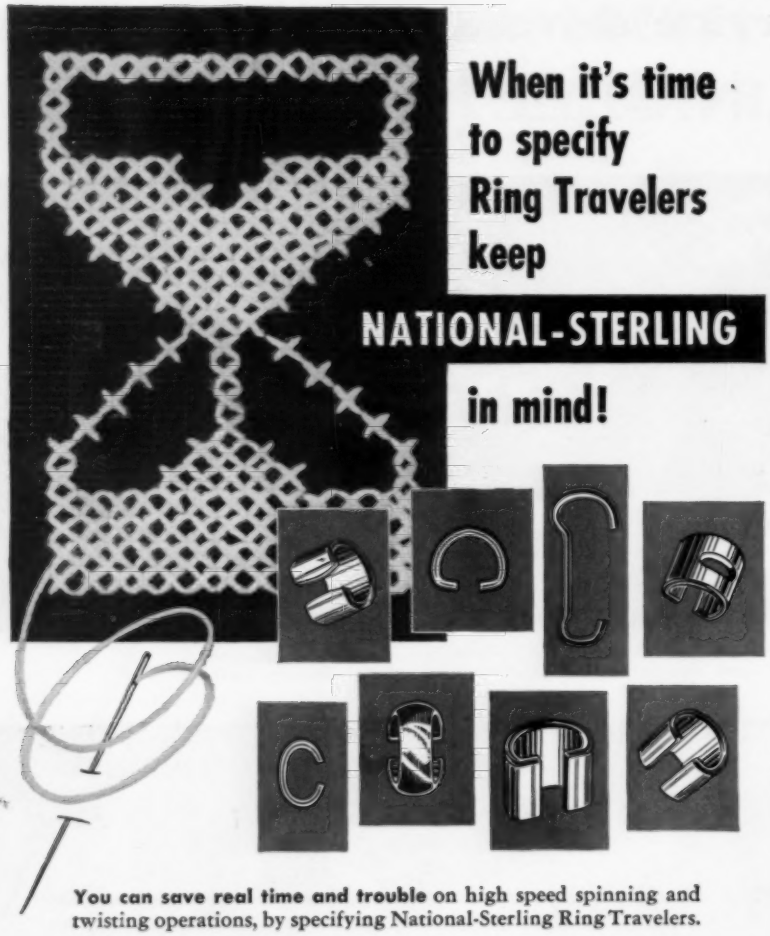

You can save real time and trouble on high speed spinning and twisting operations, by specifying National-Sterling Ring Travelers.

Time after time, experienced mill men find that National Travelers consistently deliver more pounds of first class yarn . . . at higher spindle speeds . . . with fewer ends down. They know, too, that every traveler in every box on every order is completely uniform in weight, dimensions, temper and finish . . . made to meet their exact requirements.

The next time you need travelers, be sure to get the full National-Sterling story. Whether you're running cottons, wools, synthetics or blends, a National-Sterling Engineer can help you select the *right* travelers for your particular operation. Ask him and see. Write, wire or phone National Ring Traveler Company and Sterling Division, 354 Pine Street, Pawtucket, R. I. Southern Office and Warehouse: P. O. Box 293, Gaffney, South Carolina.

NATIONAL
Sterling
RING TRAVELERS

F. L. CHASE, JR., *Pres. & Treas.* **L. E. TAYLOR,** *Southern Mgr.*

FOR SPINNING AND TWISTING ALL NATURAL AND SYNTHETIC FIBRES

There's a NATIONAL man nearby!

H. B. ASKEW	T. H. BALLARD	F. S. BEACHAM	H. A. CARTER	D. C. CREECH
P. O. Box 424	112 N. 9th St.	P. O. Box 511	354 Pine St.	P. O. Box 5083
Griffin, Ga.	Belmont, N. C.	Honea Path, S. C.	Pawtucket, R. I.	High Pt., N. C.

Export Agent: **A. M. ROMERO CORP.,** 350 Fifth Ave., New York 1, N. Y.

force. In can spinning, the can is a feeding element.]

May I suggest that the name "sliver spinning" be used for the system of spinning yarn directly from sliver instead of from roving? I believe this designation would be equally appropriate for machines like Pfenningsberg's where the sliver is wound on a ball instead of being placed in a can.

ROBT. M. JONES
Vice President

Saco-Lowell Shops
Biddeford, Maine

THIS KINK FORMULA IS SAID TO BE DANGEROUS

Dear Editor:

I read with interest the Kink, K-3380, by M. C. Dutt, Madras, India [TEXTILE WORLD, Oct., '57, p. 165]. I asked the opinion of our technical coordinator, Mr. L. J. Labrie, regarding this rather interesting formula to make cement for splicing leather.

His reply is that the formula is probably OK for someone who wants to lose a factory.

Carbon bisulfide is extremely poisonous and flammable, yet without it you probably couldn't use the gutta percha ingredient.

ROBERT P. MORNINGSTAR
Morningstar, Nicol, Inc.
New York, N. Y.

INCREASED SEAT COVER SALES DUE TO PRODUCT PROMOTION

Dear Editor:

A promotional program, including a National Good Car Keeping Week and intensive nationwide publicity, has resulted in a substantial increase in the sales of automobile seat covers.

Figures for a three-month period in 1957 immediately following inauguration of the promotion showed an increase in dollar sales of 22.6% over the corresponding period of 1956. Unit sales during the same period showed a top increase of 33%.

Because of the excellent results achieved to date, the Automobile Seat Cover Manufacturers Assn. will expand its promotional efforts in the future. We hope that every motorist will realize that good car keeping is as important as good housekeeping. Good car keeping begins with beautiful seat covers.

ASCMA

1711 Pratt Blvd.
Chicago 26, Ill.

CONTINUED ON PAGE 22

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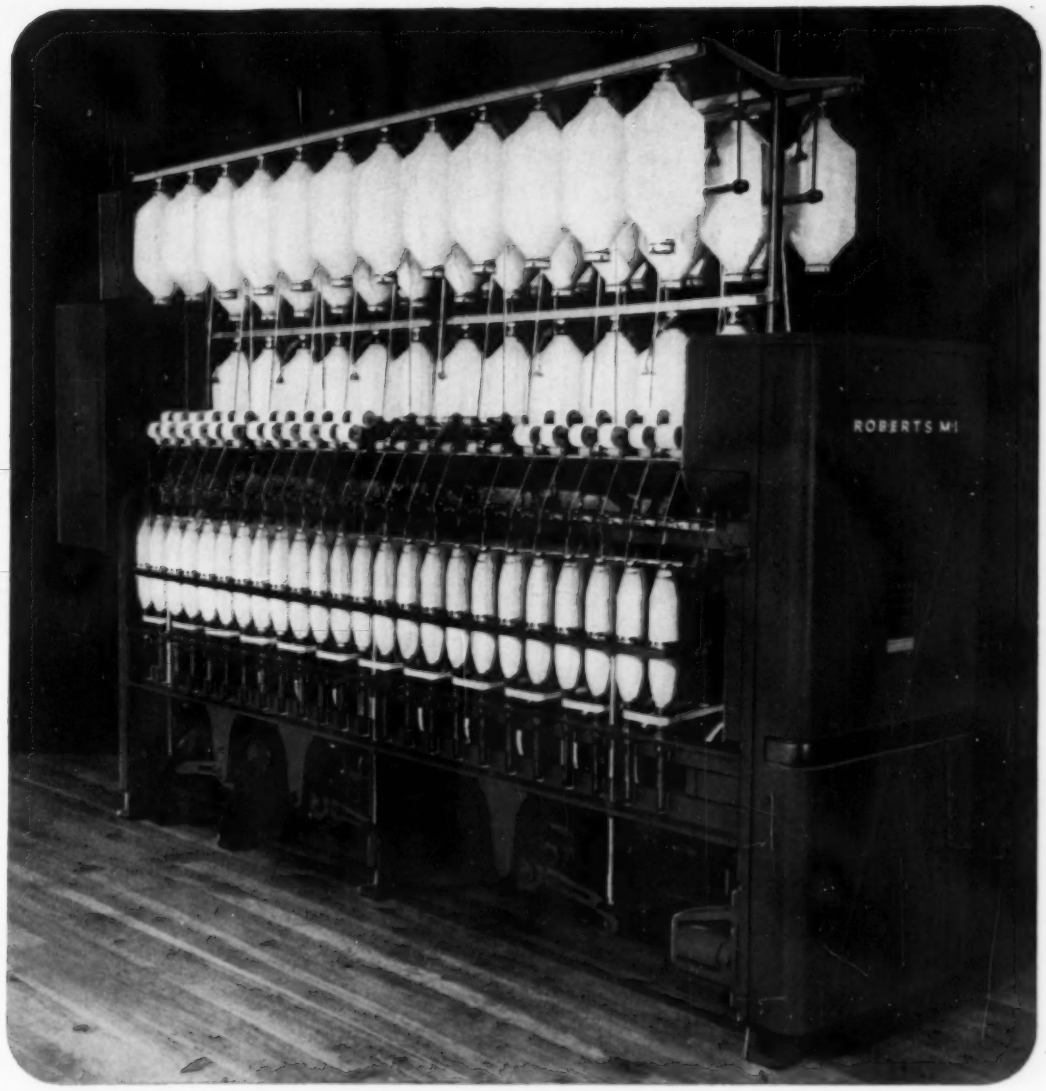

ROBERTS SPINNING

ALL NEW—ALL BALL BEARING ROBERTS M-1 SPINNING FRAME

MODERN IN DESIGN

Into the rugged simplicity of the Roberts M-1 chassis has been built all the ball bearing features needed to provide the smooth operation and productivity for today's and tomorrow's production goals. Standard features include:

- FLEXIBILITY FOR COTTON AND SYNTHETICS
- BALL BEARING TOP ROLL SUSPENSION
- BALLOON CONTROL ARRANGEMENT
- BUILT-IN UnitVac SUCTION CLEANING
- EXTRA CAPACITY SPINDLES
- FULL BALL BEARING HEAD
- 45 DEGREE ROLL STANDS
- LATCH-TYPE BOBBIN HOLDER AEROCREEL
- STEEL BASE RAILS, ROLL BEAMS, RING RAILS
- ADJUSTABLE DRAFT CONSTANT, 500 to 3000
- TURNKEY ERECTION AND STARTUP

PROVEN IN PERFORMANCE

New Roberts Spinning has been running in the mill since February 1956 and has proven itself not only most economical in initial cost but low in maintenance. One large user with more than 200 frames in continuous production reports that the new Roberts Spinning runs with higher front roll speeds, better yarn quality and substantially lower ends down than the several thousand frames of other makes in operation in their mills.

ROBERTS COMPANY

SANFORD, NORTH CAROLINA

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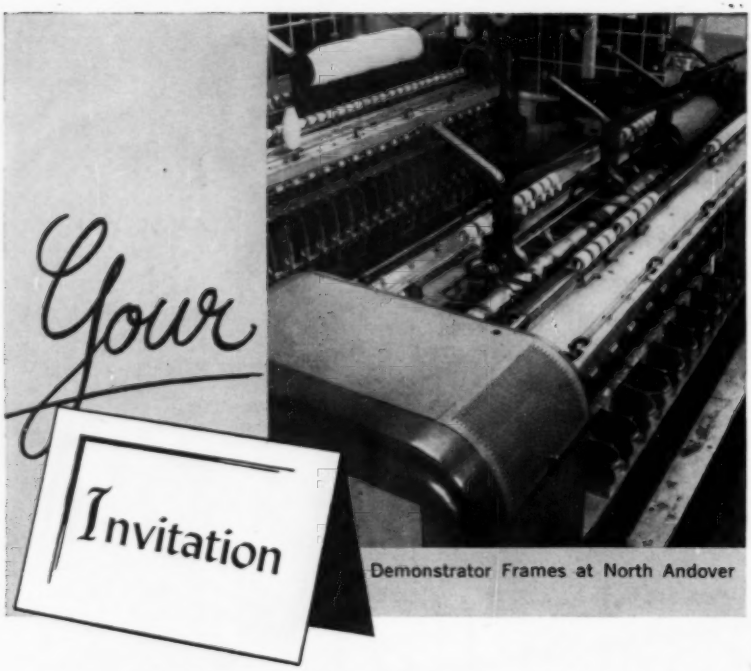


Demonstrator Frames at North Andover

to "Coordinated Production"

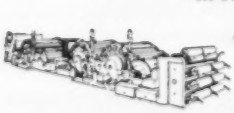
Any required Quality Yarn at High Production Rates can be a *Known Quantity* for you when you run a sample lot of your own standard roping on the most up-to-date Davis & Furber Woolen Ring Spinning Frame — under the supervision of D&F "Coordinated Production" Spinning Technicians.

You are invited to try such a D&F Demonstration, complete with all the most modern technical developments. This can be made available to you either at North Andover or Charlotte. In fact, it can even be arranged on your own D&F Frame in your own mill.

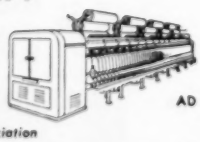
Your stock may be wool, rayon fibre, or nylon. Or it may be a blend of any or all of these fibres plus cotton waste, asbestos, hair blends, or any of the many known synthetics.

Prepare samples of your own roping. Then, let us show you how the Davis & Furber Spinning Frame can bring you the profitable advantages of "Coordinated Production" through greater volume and better quality. Get in touch with — Davis & Furber at North Andover or Charlotte. Do it now.

DAVIS & FURBER
MACHINE COMPANY



TEXTILE MACHINERY DESIGNERS AND MANUFACTURERS
North Andover, Mass.
Charlotte, North Carolina



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Member — American Textile Machinery Association

CARDS • SPINNING FRAMES • PREPARATORY MACHINERY • WARP DRESSING MACHINERY • FINISHING MACHINERY
MACHINERY MODERNIZATION • ACCESSORIES, SUPPLIES, CARD & NAPPER CLOTHING, GARNET WIRE, TAPES & APRONS
SPARE PARTS • TECHNICAL SERVICE & CONSULTATION

DELEGATING RESPONSIBILITY

Dear Editor:

Delegating responsibility brings problems of its own to mill management. This statement holds true regardless of the level at which the process takes place. Furthermore, it's difficult to tell who is more disappointed when matters do not work out well—management or worker.

Management men who find it hard to pass responsibility along to others might try a few angles based on percentages.

For example, if the worker finds he has been handed assignments made up almost entirely of tiresome details that management wanted to be rid of, results naturally will be poor. But making sure no less than 10% of the new duties have at least an interesting angle will change the whole situation by earning worker enthusiasm.

Another 10% might profitably be made up of tasks with a degree of training in their efficient performance. Men like to know they are preparing for something better in connection with new responsibilities.

Certainly a high percentage of delegated tasks must be at least to some extent on the monotonous side. That has advantages in convincing the worker that even top management in the mill has an element of just plain routine. But by making sure that something interesting and something educational plays a part in all delegated responsibility, management and employees both gain.

GEORGE M. DODSON

Harrisburg, Pa.

THE INDIVIDUAL HAS A PART IN BASIC RESEARCH

Dear Editor:

In your Message To American Industry about basic research [TEXTILE WORLD, Dec., '57, p. 95], some important points were brought out. Research laboratories staffed by trained technicians are vital, but we shouldn't overlook the value of the individual researcher.

Many of our most important discoveries were made by men and women who had no special training and poor research facilities. Before there can be a new development, except by accident, there must be an idea. Most ideas are hatched in some imaginative person's mind—not in a laboratory. We should encourage creative thinking to provide ideas for the laboratories and technicians to develop and perfect.

I. D. A.

Greenville, S. C.

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THE HUNTER CASCADE PAYS FOR ITSELF WITHIN A YEAR!

This is a typical installation of the Hunter Cascade Washer.

It is possible for the Hunter Cascade Continuous Washer to give you such remarkable savings in labor, water, floor space, and capital investment that it will pay for itself within a year. Consider these savings:

LABOR — The Hunter Cascade Washer can be operated by two men per shift at speeds up to 60 yards per minute.

WATER — The Hunter Cascade Washer requires about one-sixth as much water as dolly washers. You save on water, on steam to heat it, on power to pump it, and on the necessary softener, soap and alkali for scouring.

FLOOR SPACE — The Hunter Cascade saves valuable floor space. In some installations, savings are as high as 50%.

CAPITAL INVESTMENT — The Hunter Cascade costs far less than other continuous washers. Because of its low initial cost and outstanding operating savings, *small mills producing less than 500 pieces can now afford continuous washing.*

The Hunter Cascade can pay for itself quickly in your mill. Write today for new Bulletin . . . and get specific details.

JAMES HUNTER

JAMES HUNTER MACHINE COMPANY • NORTH ADAMS, MASSACHUSETTS
SOUTHERN SERVICE PLANT: JAMES HUNTER, INCORPORATED • GREENVILLE, S. C.

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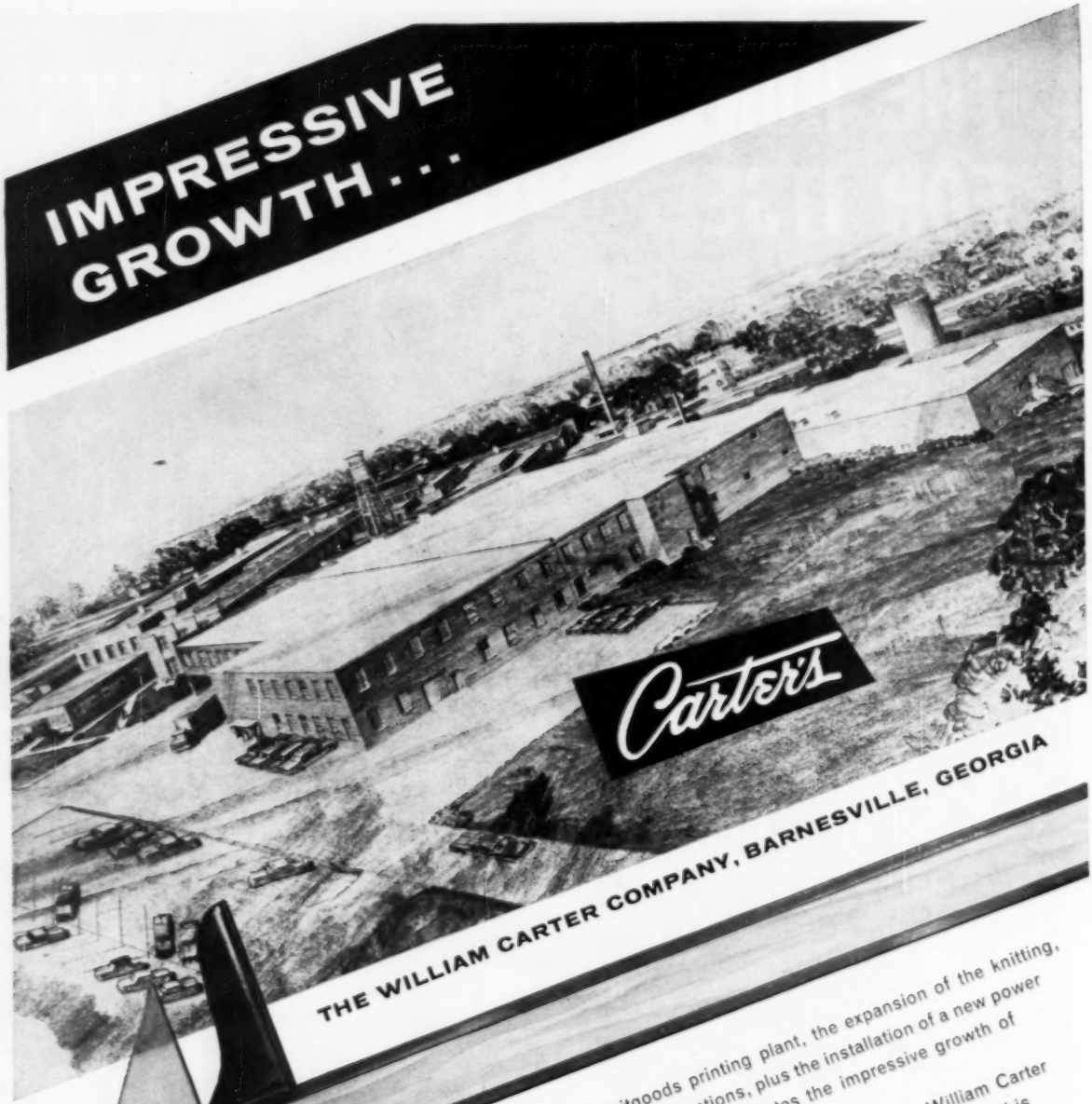
IMPRESSIVE GROWTH . . .



THE WILLIAM CARTER COMPANY, BARNESVILLE, GEORGIA

The completion of a new knitgoods printing plant, the expansion of the knitting, bleaching, dyeing, and finishing operations, plus the installation of a new power plant at The William Carter Company indicates the impressive growth of one of the finest names in knitwear.

Robert and Company Associates, working closely with The William Carter Company has just completed its fifth major project in three years for this client, more than doubling the size of the manufacturing plant.

Robert and Company Associates has served the textile industry for more than 40 years, providing complete services for modernization and expansion programs from sketch plans to owner acceptance.

ROBERT AND COMPANY ASSOCIATES
Textile Engineering Division
ATLANTA

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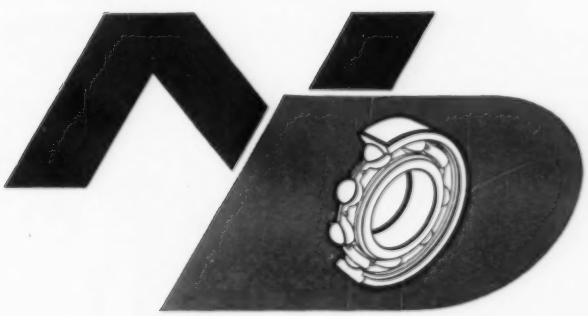
NEW DEPARTURE

NEW DEPARTURE

NEW DEPARTURE



Symbol of a Reputation

. . . a reputation for integrity, for quality and service . . . for advanced creative engineering achieved by New Departure in over half a century of precision ball bearing manufacture.

You'll find this emblem is also symbolic of our determination to continue, in the fullest measure, all those factors which have built that reputation. It is a visual pledge of this resolution to all our customers, present and future.

turning point of modern industry

1908–1958 GM FORWARD FROM FIFTY

NEW DEPARTURE

DIVISION OF GENERAL MOTORS—BRISTOL, CONN.

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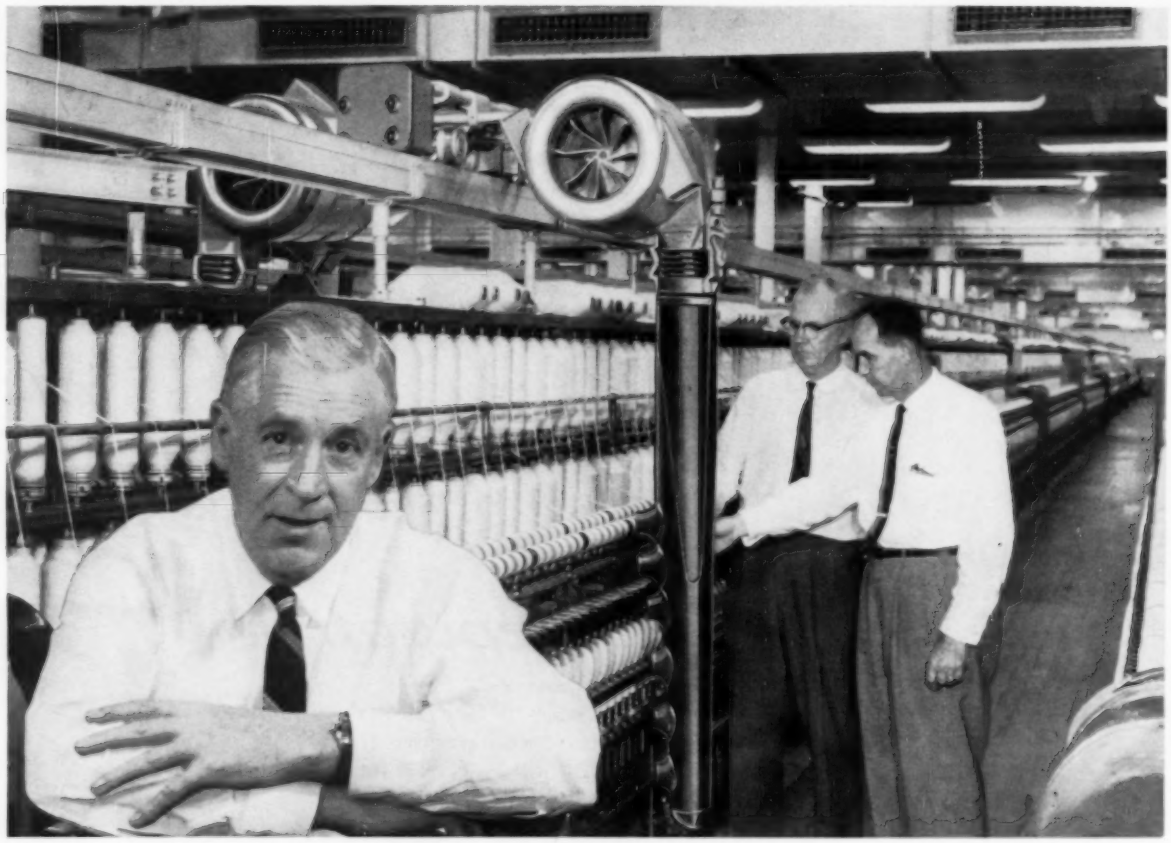
WHY CLINCHFIELD MANUFACTURING CO.
CHOSE BAHNSON CROSS-JET CLEANERS



"It moves lint from the lights, walls, air ducts and creels that other frame cleaners do not touch."

says **Mr. G. A. Morris,** *Exec. V. Pres. & Treas.*, Clinchfield Mfg. Co., Marion, North Carolina

THE BAHNSON CROSS-JET CLEANER was installed at Clinchfield Mfg. Co. along with other cleaners for comparison. Mr. Morris says, "Without exception all Spinning Supervisors voted for the Cross-Jet. The Bahnson cleaner seems to be more rugged and the 'outboard motors' very definitely handle much more air volume." Your mill, like Clinchfield, can profit from efficient and thorough frame cleaning with the advanced Bahnson Cross-Jet Cleaner.

Let a Bahnson representative give you more details on the Cross-Jet Cleaner. Write or call Bahnson today.

Bahnson
COMPANY
WINSTON-SALEM, N. C., U. S. A.

ONE SOURCE for Complete Modernization Equipment.

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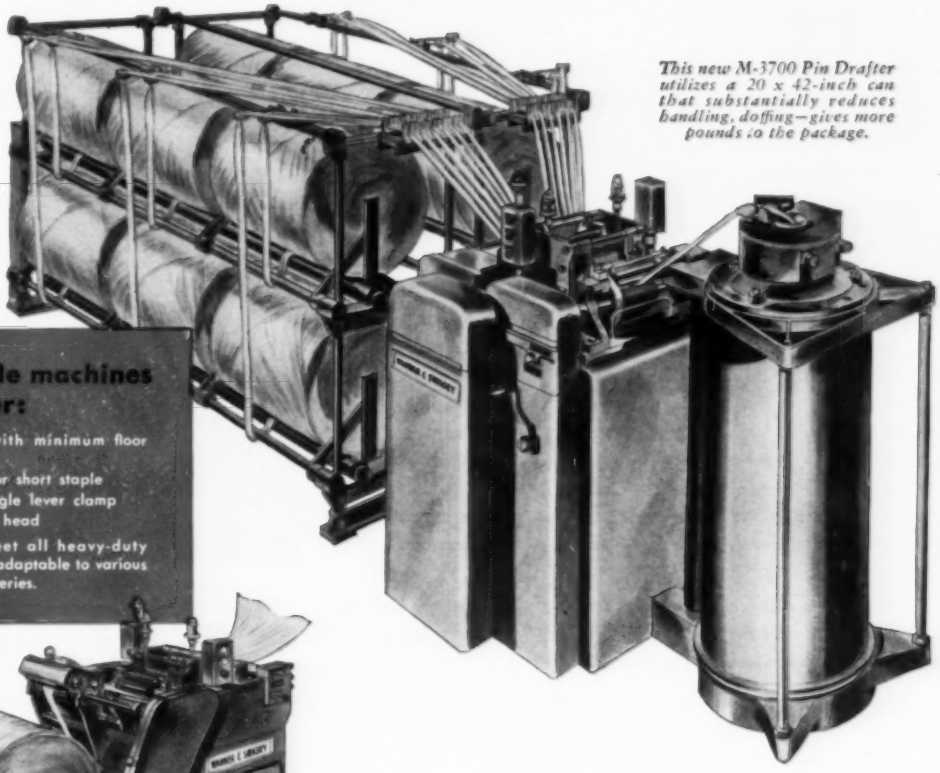
NOW AVAILABLE!

New Warner & Swasey Wide Setover Pin Drafter®—handles all your drawing needs



This new M-3700 Pin Drafter utilizes a 20 x 42-inch can that substantially reduces handling, doffing—gives more pounds to the package.

These versatile machines offer:

- High productivity with minimum floor space
- Close nip control for short staple
- Completely new single lever clamp
- Redesigned balling head

In addition they meet all heavy-duty requirements and are adaptable to various attachments and deliveries.

The new Balling Head Pin Drafter delivers up to 18" x 24" ball that may weigh 50 pounds. Flexibility of the unit allows the mill to produce the type of package to meet their specific requirements.

No matter where you are now using pin-controlled drawing equipment, a whole new field of profitable operation is opened up by the "all-purpose", versatile 8" wide setover Pin Drafter Intersecting Draw Frame. See your Warner & Swasey Field Engineer today for the complete story.

® Reg. U. S. Pat. Off.

WARNER & SWASEY
TEXTILE MACHINERY DIVISION

SALES OFFICES

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20 Chestnut Street, P. O. Box 215, Needham 92, Mass.
121 11th Street, N. E., Atlanta 3, Ga. • 624 Pecan Avenue, Charlotte 1, N. C.
Suburban Square Bldg., Ardmore (Philadelphia), Pa.

YOU CAN PRODUCE IT BETTER, FASTER, FOR LESS...WITH A WARNER & SWASEY

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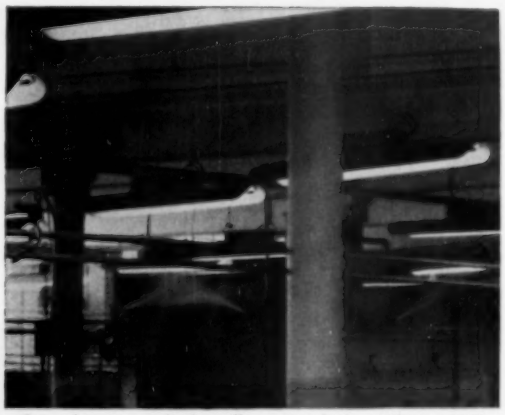
Together . . . for over 50 years!

Pepperell Manufacturing Company in textiles; American Moistening Company in air conditioning . . . *both* are well-known not only to the trade, but to each other! For it was over 50 years ago that the first Amco installation was made in a Pepperell mill. Moreover, it's a business association which has continued active right up to the present.

Amco's developments in improved methods of air conditioning today include a full list of carefully engineered devices, as well as *all* types of systems. So whether *your* requirements are for humidification alone; or in combination with cooling, such as in a ductless evaporative cooling system; or for a unit dry-duct system; or central station air conditioning . . . Amco can offer you the *right* system, composed of quality components, and based on engineering backed by seventy years experience in textile air conditioning.

Call on Amco for reliable advice. Amco engineers will be glad to suggest a solution to any air conditioning problem you may have. There is absolutely no obligation.

Amco cooling and ventilating installation in spinning room of Pepperell plant.

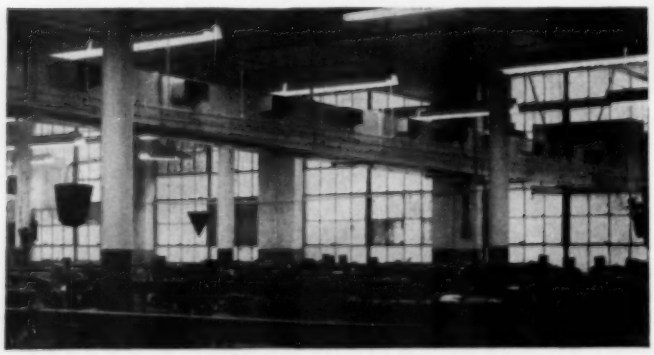


Some departments in the mill use straight humidification with Amco atomizers.

AMCO

AIR CONDITIONING SYSTEMS

AMERICAN MOISTENING CO. • CLEVELAND, NORTH CAROLINA
BRANCHES:
ATLANTA, GA. • PROVIDENCE, R. I. • TORONTO, ONT.



Amco unit dry-duct system installed in weave room.

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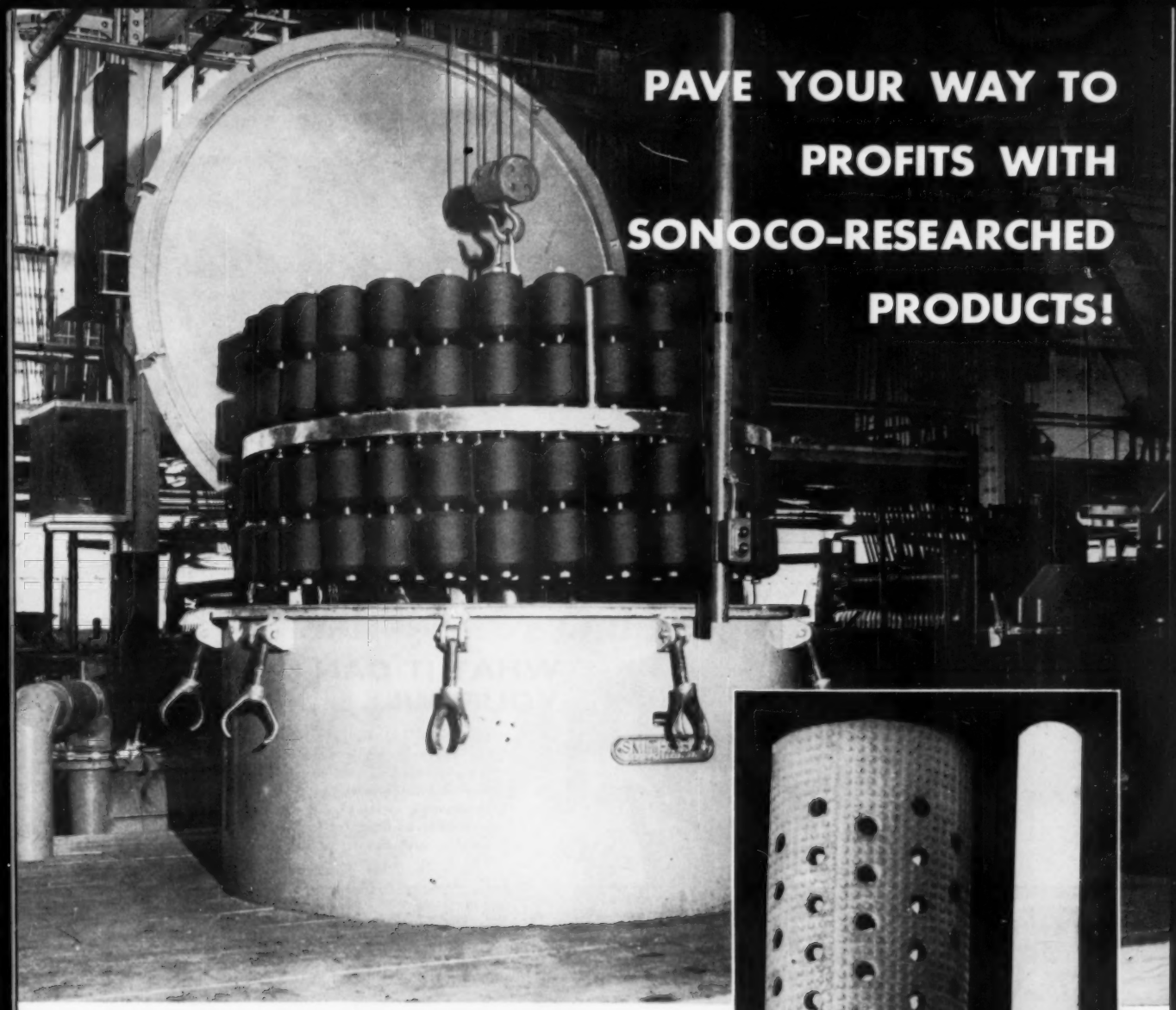
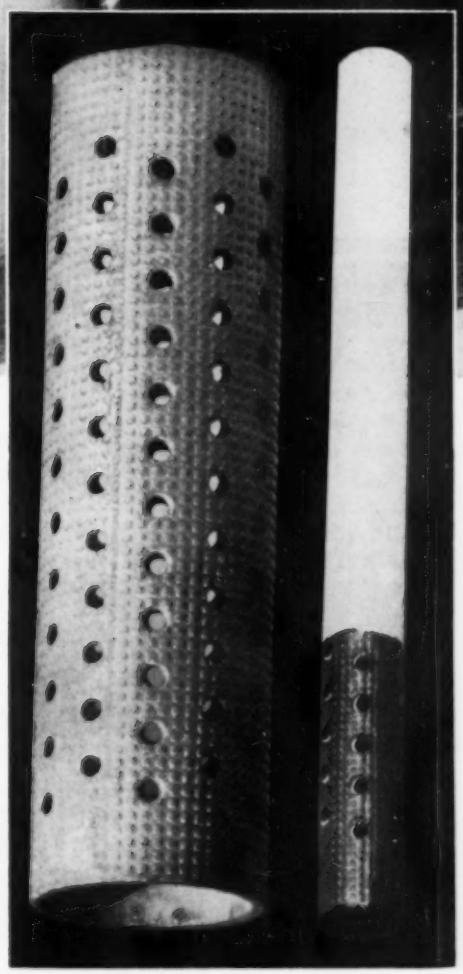


PAVE YOUR WAY TO PROFITS WITH SONOCO-RESEARCHED PRODUCTS!



You might well ask how Sonoco research can possibly increase your profits! It can and does! Take Sonoco Dytex Tubes for example. Here is a product that has been accepted by the industry for all standard forms of package dyeing. When used with the exclusive Plastavon Sleeve, you have the perfect combination for better and cleaner dyeing.

Sonoco is the one company in its field that, for nearly 60 years, has supplied the industry with research-developed paper carriers. For you, Sonoco products mean better performance, greater economy and more profit . . . and exhaustive Sonoco research has proved it!

SONOCO

Products for Textiles

SONOCO PRODUCTS COMPANY

Main Office—HARTSVILLE, S. C. • MYSTIC, CONN. • AKRON, IND. • LOWELL, MASS. • PHILLIPSBURG, N. J. • LONGVIEW, TEXAS • PHILADELPHIA, PA. • LA PUENTE, CAL. • ATLANTA, GA. • GRANBY, QUEBEC • BRANTFORD, ONTARIO • MEXICO, D. F.

Saco-Lowellizing

WHAT IT MEANS....

(A) To utilize floor space so as to improve the flow of production.

(B) To co-ordinate the successive steps in processing.

(C) To reduce waste, spoilage, and unnecessary handling of stock.

(D) To realize the greatest economies in operating and maintenance costs.

WHAT IT CAN DO FOR YOUR MILL....

Specifically, you can expect *increased production* per man hour, *higher yield* from raw stock and *lower production costs*. This program creates the important improvement in quality and savings in operating expense so essential to maintaining profitable operations under today's highly competitive conditions.

Here are the results from a recent case history:

Type of Goods — 39" 80 x 80 4.00-yd. top quality print cloth

No. of Looms — 824

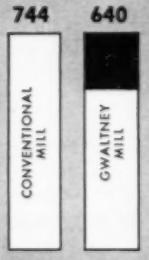
Production per 8-hour Shift — 6120 lbs.

Count of Warp — 31's

Filling — 41's

NO. OF SPINDLES	CONVENTIONAL MILL	SACO-LOWELL GWALTNEY MILL
	40,032	38,592

Man Hours per 8-hour Shift
(Opening and picking through Cloth Room)

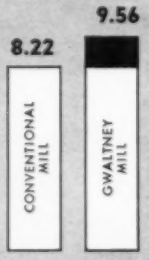


Reduction in Man-hours in Gwaltney Mill
13.98%

Spinning Spindles per Operative

Increase in Gwaltney Mill
53.06%

Pounds per Man-hour
(Opening and picking through Cloth Room)



Increase in Gwaltney Mill
16.3%

IT'S TIME FOR YOUR MILL TO START A
SACO-LOWELLIZING PROGRAM
CONTACT YOUR NEAREST SACO-LOWELL OFFICE

SACO-LOWELL SHOPS

60 BATTERYMARCH STREET, BOSTON 10, MASS.

Shops at BIDDEFORD & SACO, MAINE; SANFORD, N.C.; EASLEY, S.C. Sales Offices: CHARLOTTE · GREENSBORO · GREENVILLE · ATLANTA

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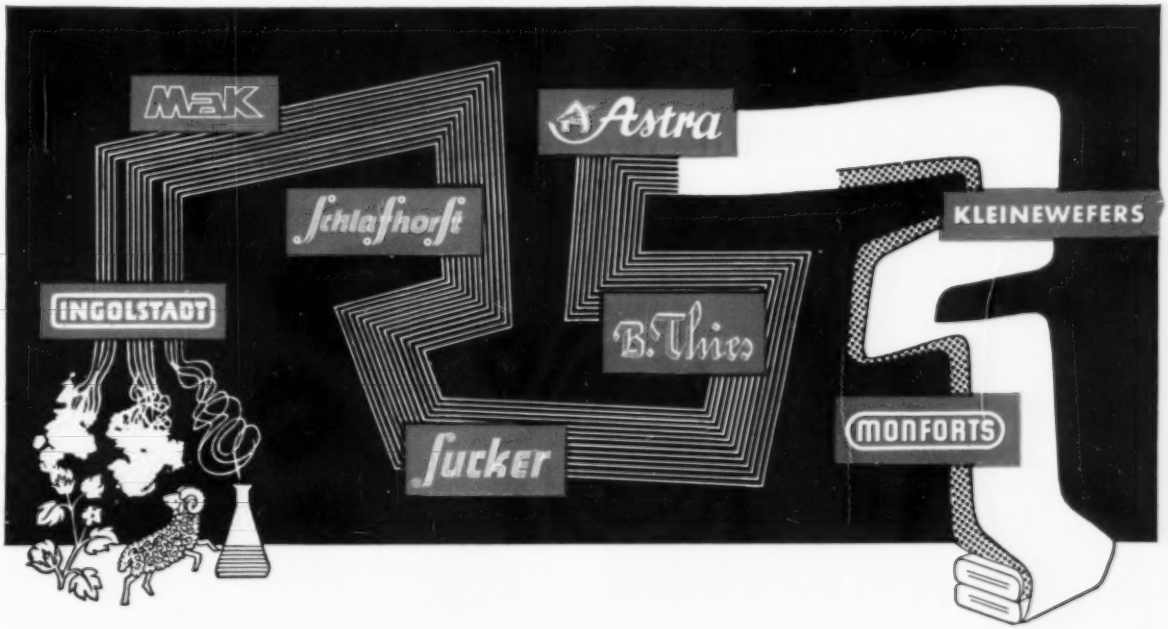

From the fibre to the finished fabric

UNIONMATEX *advises you, plans expertly and delivers*

textile machinery for your new projects, mill additions and mill modernisation

INGOLSTADT Spinning Machinery for cotton, artificial staple-fibre and worsted
MAK Card Sets · Self-acting Mules · Ring spinning Frames
SCHLAFHORST Machines for winding-warping and sectional warping
SUCKER Sizing Machines · Size Mixing and Cooking Installations
THIES Dyeing and Bleaching Plants for yarns and card-slivers of all kind
ASTRA Weaving Machines for cotton-, wool- and special fabrics e. g. feltcloths · Jacquard-weaving Machines
KLEINEWEFERS Calenders · Mangles · Printing-, Mercerizing machines · Continuous Bleaching and Dyeing Plants
MONFORTS Finishing Machinery · Measuring, Inspecting, Plaiting, Rolling and Doubling Machines for all kinds of cloth

NET

UNIONMATEX TEXTILMASCHINEN-UNION GMBH, FRANKFURT/MAIN, NEUE MAINZER STR. 22
CABLE: UNIONMATEX · TELEX: 0412487 · TELEPHONE: 95168/93822

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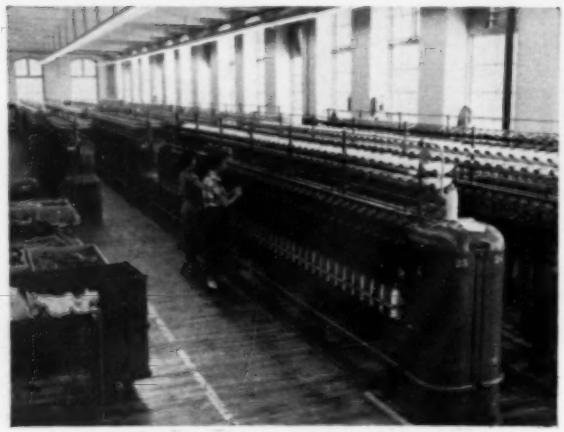
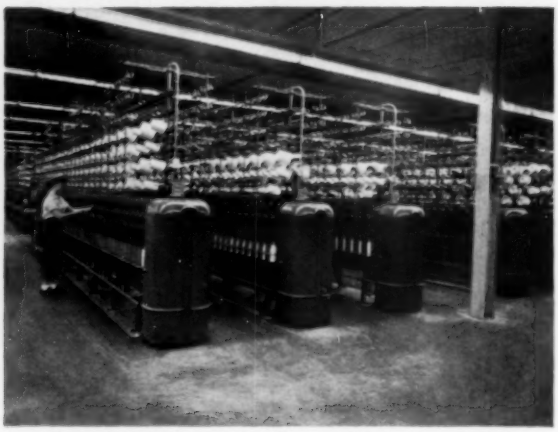
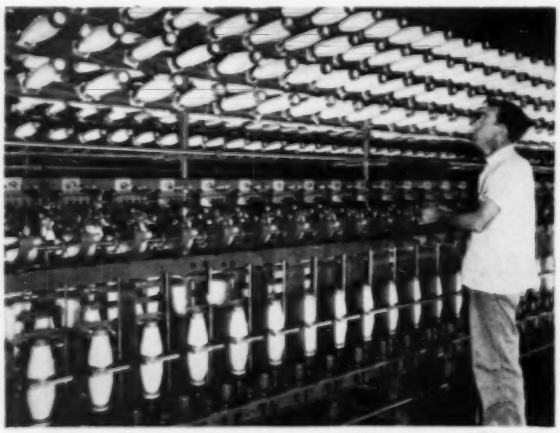
Leesona® Model 10 puts a wonderful twist on any yarn



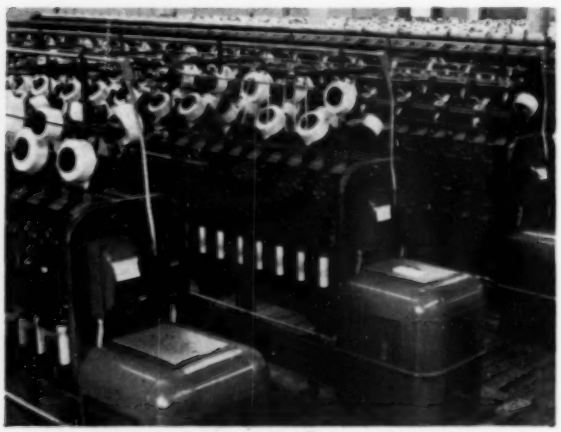
Twisting wool and worsted from spinning bobbins onto taper-top, take-up packages, as supply for winding machines.



Worsted, synthetic and metallic yarns from cones are plied together, twisted and taken up on large packages.



Twisting glass yarn from pirns to double-taper packages which will be used for filling and warping without re-winding.



Twisting Dacron* directly from zero-twist cheeses onto straight wind bobbins for further processing on high speed UNIRAIL® Uptwisters.

The world's best yarns — and all the others too — natural or synthetic — spun or filament can be plied and twisted best on a Leesona Model 10 Ring Twister.

With it you twist single end yarn or combine two to 16 ends, with a twist range of ½ to 55 turns. Automatic stop motion for each end in the ply permits tying knots in singles.

Here's the most versatile of twisting machines ready for any kind of package delivery — cones, cheeses, cakes, pirns, spools, bobbins or tubes. Produces straight wind, taper-top or double tapered take-up packages (filling or warp wind).

For more facts and figures write for Leesona Model 10 Ring Twister Bulletin 10-A.

*Dacron is a DuPont registered trademark.

UNIVERSAL WINDING COMPANY

P. O. BOX 1605, PROVIDENCE 1, R. I.

Sales Offices: Boston • Philadelphia • Charlotte • Atlanta • Los Angeles
Montreal • Hamilton, Canada

Agents in every principal textile center throughout the world

23.7.6

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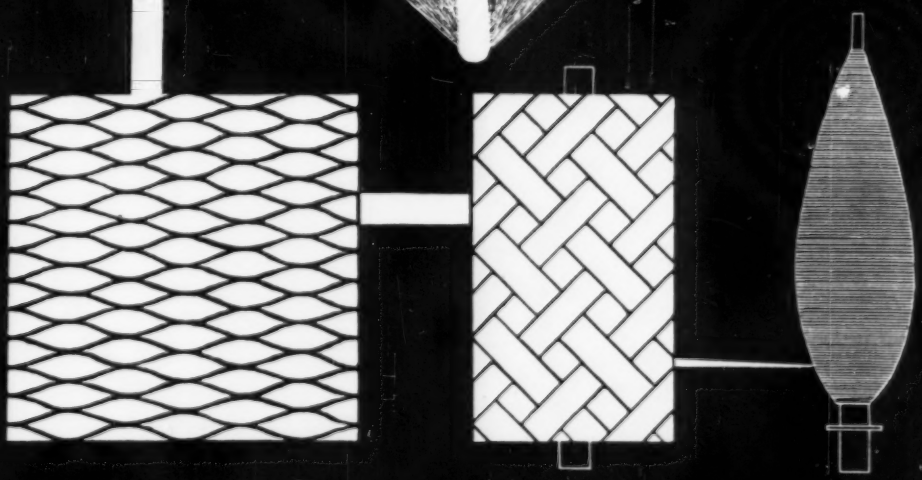
DEUTSCHER SPINNEREIMASCHINENBAU INGOLSTADT / Donau

INGOLSTADT



SPINNING MACHINERY FROM INGOLSTADT THROUGHOUT THE WORLD!

SPINNING MACHINERY FROM INGOLSTADT THROUGHOUT THE WORLD!

SPINNING MACHINERY

FOR COTTON · ARTIFICIAL STAPLE FIBRE · WORSTED

Planning and supply of complete spinning plants based

on latest experience in spinning technology and mechanical engineering

Spares for spinning machinery · Conversions of draft systems

VIII.

DEUTSCHER SPINNEREIMASCHINENBAU INGOLSTADT / Donau

ALL YOURS WITH RAYON STAPLE

American Enka's new staple plant is an important new source for users of spun rayon.

AMERICAN ENKA CORPORATION

PRODUCERS OF JETSPUN® SOLUTION-DYED RAYON · SKYLOFT LOFTED FILAMENT RAYON · FILAMENT AND STAPLE RAYON · FILAMENT AND STAPLE NYLON

530 Fifth Ave., New York 36, N.Y. · 871 McCallie Ave., Chattanooga, Tenn. · 428 Jefferson Standard Bldg., Greensboro, N. C. · 2001 Industrial Bank Bldg., Providence, R. I.

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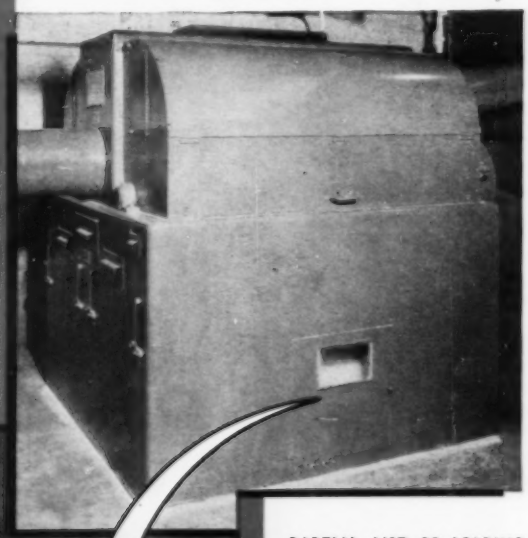
Whitin AXI-FLO*

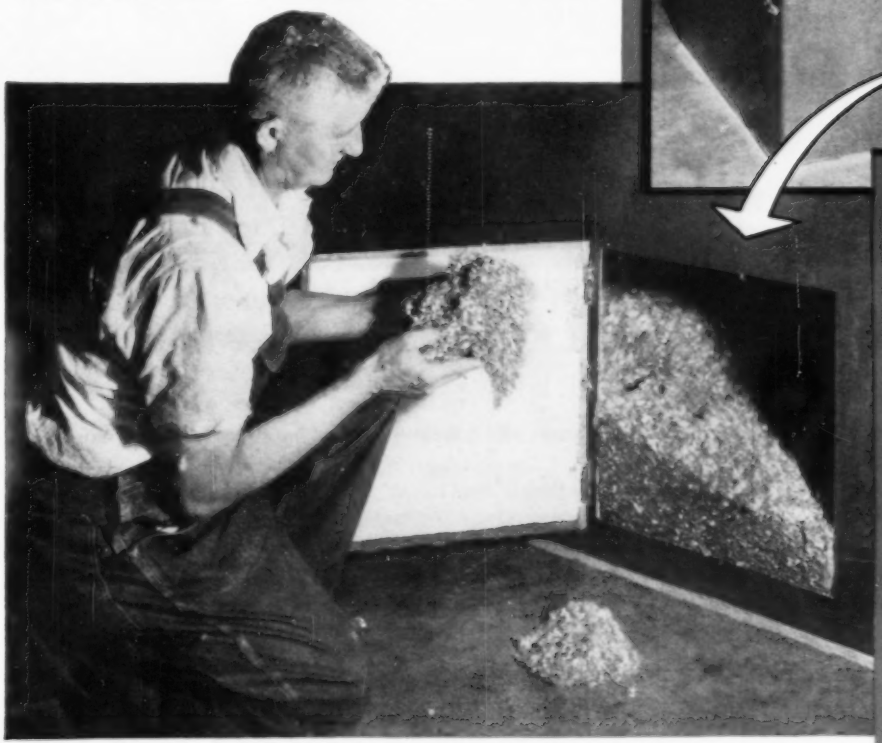
Only unmatched cleaning performance could bring such speedy, world-wide acceptance

The gentle buffeting action of the new type Whitin Axi-Flo cleaner results in greater dirt, grass, dust, mote and trash removal; improved blending; better stock quality; much lower power and maintenance costs. It is especially effective when preceded by Axi-Feed openers on blending feeders. Its outstanding performance has resulted in remarkably rapid acceptance by leading mills all over the world.

AXI-FLO PERFORMANCE DATA

Cotton Grade	Average percent Waste Removal	Cotton Grade	Average percent Waste Removal
GM	.5 - .6	SLM	1.2 - 1.8
SM	.6 - 1.0	LM	1.6 - 2.5
M	.7 - 1.6	SGO - GO	2.0 - 4.0





PARTIAL LIST OF LEADING MILLS NOW USING AXI-FLO

United States

Alexander Mills
Avondale Mills
Berkshire Hathaway
Bibb Mfg. Co.
Chicopee Mfg. Co.
Fieldcrest Mills
Franklin Process Co.
Gold-Tex Fabrics Corp.
Green River Mills
Greenwood Mills
Hadley-Peoples Mfg. Co.
Inman Mills
Jefferson Mills
Judson Mills
Kendall Co.
Lydia Cotton Mills
Mission Valley Mills
Monarch Mills
Pepperell Mfg. Co.
Reeves Bros.
Spartan Mills
Woodside Mills

Canada

Canadian Cotton Co. Ltd.
Hamilton Cotton Co. Ltd.
Wabasso Cotton Co. Ltd.

More than 50 mill installations in:

Mexico • Colombia • Belgium • France • Finland • Holland • Germany • Austria • Italy • Switzerland • India • Korea

*TRADE MARK

For complete information, ask your Whitin representative — or write direct to us.

Whitin MACHINE WORKS
WHITINSVILLE, MASSACHUSETTS

CHARLOTTE, N. C. • GREENSBORO, N. C. • ATLANTA, GA. • SPARTANBURG, S. C. • DEXTER, ME.

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Setting records to rival the satellites . . .

Around the world 1113 times for $1.00

Calculations based on typical mill production records of Victor 4/0 F1.1 X3D Travelers show that one dollar's worth ran about 27,840,000 miles — 1113 times the distance around the world at the equator.

Such durability in tiny travelers is something to impress even the satellite builders. And, considering the billions of dollars it costs to launch just one satellite into its orbit, they find Victor Traveler *economy* even more amazing.

Performance like this is convincing proof that Victor's special attention to quality control pays off for you. You can be sure that the Victor Travelers you choose will take top rating in any test for uniformity and lasting economy.

Plan now to talk to a Victor Service Engineer. He can help you choose the right travelers for your spinning or twisting, whether you are running conventional fibers, synthetics, or blends. Write, wire, or phone the nearest Victor office . . . for prompt service.

VICTOR Ring Travelers

VICTOR RING TRAVELER DIVISION
OF SACO-LOWELL SHOPS

PROVIDENCE, R. I. . . 1 Sabin St. . . . . Tel. DExter 1-0737
GASTONIA, N. C. . . . 914-916 East Franklin Ave. . . Tel. UNiversity 4-3221

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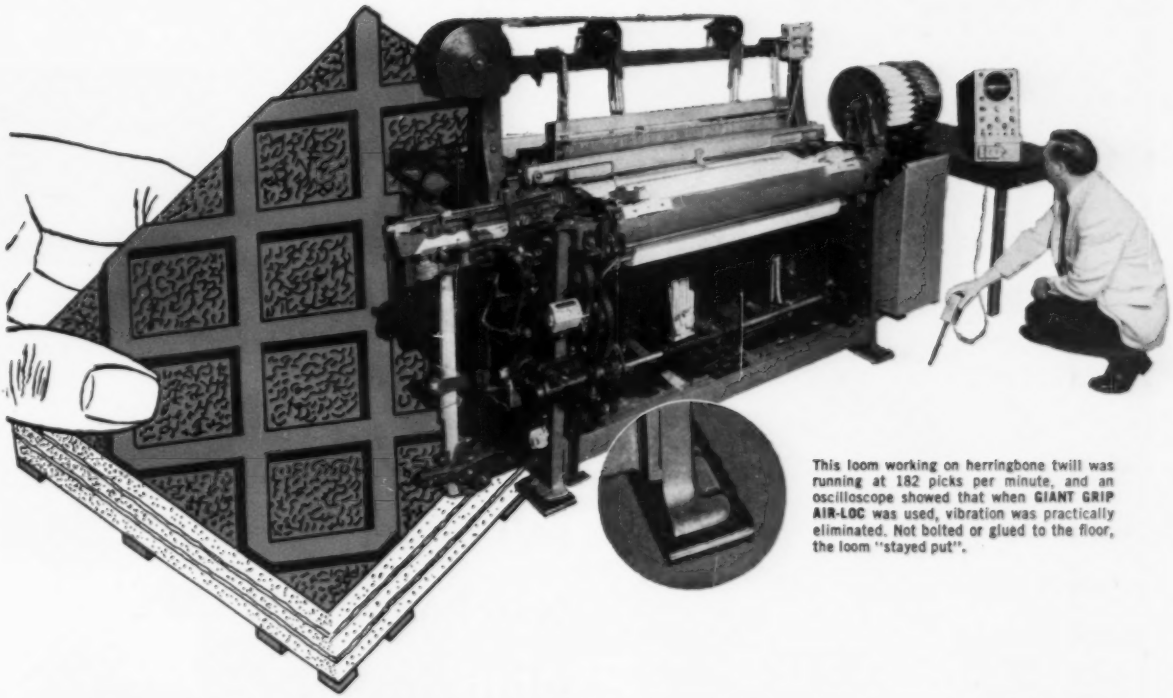

This loom working on herringbone twill was running at 182 picks per minute, and an oscilloscope showed that when **GIANT GRIP AIR-LOC** was used, vibration was practically eliminated. Not bolted or glued to the floor, the loom "stayed put".

DEVELOPED FOR LOOMS ONLY

GIANT GRIP

(patent applied for)

Air-Loc® 4·17·1

is the only loom mount that gives you *all* of these advantages:

1. *Saves you money* on installation because you use no bolts, glue or cement.

2. Special *grip surface* HOLDS looms in place, on any type of floor.

3. *Can be reused* when looms are moved, because its vinyl-cork construction is more resilient than any known mounting on the market today.

4. *Completely resists* oil, ozone and detergents.

5. Turns *vertical* loom movement into *horizontal* movement and practically eliminates the vibration that can cause downtime.

6. *Self-leveling* . . . insures permanent loom alignment.

For a sample of GIANT GRIP AIR-LOC call:

Southern Representative:	*Northern Representative:*	*Canadian Representative:*
YEOMANS TEXTILE MACHINERY CO.	**AMERICAN SUPPLY CO.**	**H. F. PRODUCTS, LTD.**
Spartanburg, S. C.	Central Falls, R. I.	Verdun, Montreal 19

or write to the manufacturer:

CLARK, CUTLER, McDERMOTT CO.

107 West Central Street, Franklin, Massachusetts

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bedspreads
blankets
tablecloths
and towels
look better
sell better
touched with
glittering...

FAIRTEX® YARNS

METALLIZED MYLAR* · METALLIC · SUPPORTED METALLIC

Fairtex with Foil or Metallized Mylar* yarns woven into fabrics for towels, tablecloths, bedspreads, blankets and sheets add the luxury look!

They look better and sell better because the vibrant beauty of Fairtex Metallics stops the eye and starts the sale!

Fairtex Yarns are non-tarnishing and can be safely washed, dry-cleaned or scoured.

As "soft-as-silk" to the touch, they are smooth, pliable and uniform and do not flake or break.

Fairtex Yarns never lose their glittering glamour and outlast even the fabric itself.

*Registered Trademark for Dupont's Polyester Film

2952

FAIRTEX CORPORATION • Charlotte, N. C.

CHICAGO:
William Napier, 3555 Peterson Avenue

NEW YORK:
Robert Napier, 51 E. 42nd Street

CHARLOTTE:
Lanier Branson, Jr. and J. E. MacDougall, Jr.,
1808 Liberty Life Bldg.

PHILADELPHIA:
William A. Popp & Associates, 3701 N. Broad Street

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It is EASIER TO INSTALL

It takes LESS SPACE

Its ACTION IS FASTER

It is EASIER TO CONTROL

FOUR GOOD REASONS WHY YOU SHOULD BUY THE BELLOWS AIR MOTOR ...THE AIR CYLINDER WITH THE BUILT-IN ELECTRIC VALVE

When it comes to downright value, it's hard to visualize an air cylinder that can even approach the Bellows Air Motor. For here is a complete packaged air cylinder power unit with all controls built-in: 8-12 volt, electrically-actuated directional valve*, two independent speed controls, and an air transfer system that makes it possible to bring air to the unit through a single flexible hose. No extra valves to buy, no cumbersome piping to install.

1016-B

For detailed data — do this:

Write Dept. TW-258, The Bellows Co., Akron 9, Ohio (in Canada, Bellows Pneumatic Devices of Canada, Ltd., Toronto, 18) for Bulletin BM-25. Or, if you prefer, phone your Bellows Field Engineer—he's listed in the phone book under "The Bellows Co."

The feature of the integral valve brings important advantages. Installation is easier, electrical hook-up is simpler. It fits well in cramped quarters, or on moving machine elements. And of even more importance—the built-in valve means faster action, quicker response, less air consumption, and positive control over piston rod movement.

The Bellows Air Motor is made in five bore sizes: 1¼", 1¾", 2½", 3⅝" and 4½" and in any stroke length. You can have your choice of six different built-in valving arrangements, plus optional hydraulic piston movement stroke control.

*115 Volt for J.I.C. applications, if desired.

The Bellows Co.

DIVISION INTERNATIONAL BASIC ECONOMY CORPORATION

AKRON 9, OHIO

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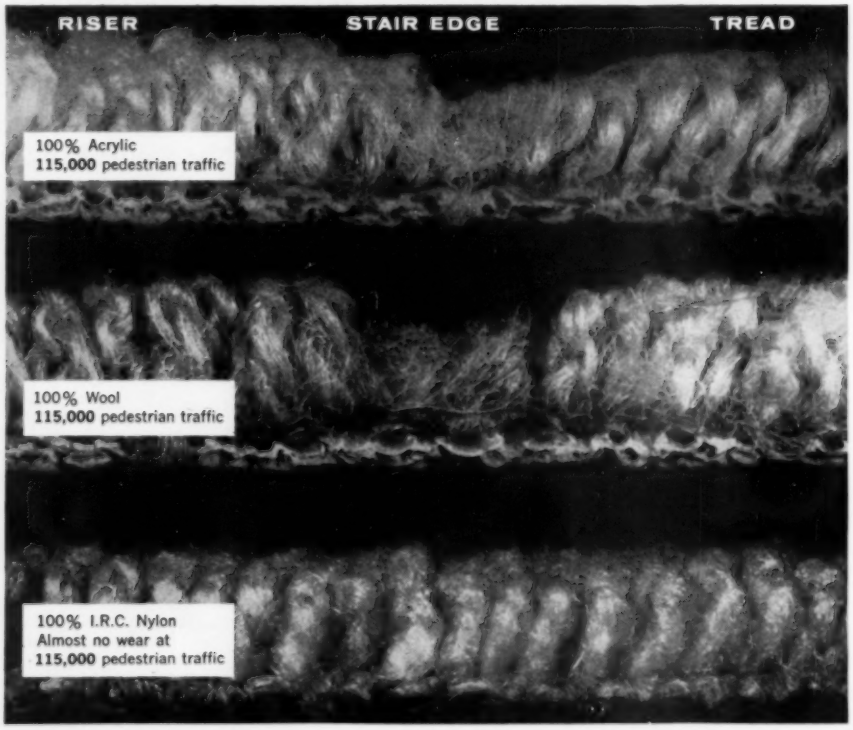
name your carpet fiber...

NYLON outwears them all!

"How does it wear?" That's one of the most important questions consumers ask. Permanent textures, recovery from crush, excellent resistance to matting, and great resiliency are other important performance characteristics consumers ask about. Nylon has them *all*, as proven in *actual wear tests!* The toughest possible traffic test proves... *no other fiber adds durability to floor covering like nylon!*

TEST NO. 1...NYLON COMPARED WITH WOOL AND ACRYLIC CARPET FIBER

LOOP PILE CONSTRUCTION



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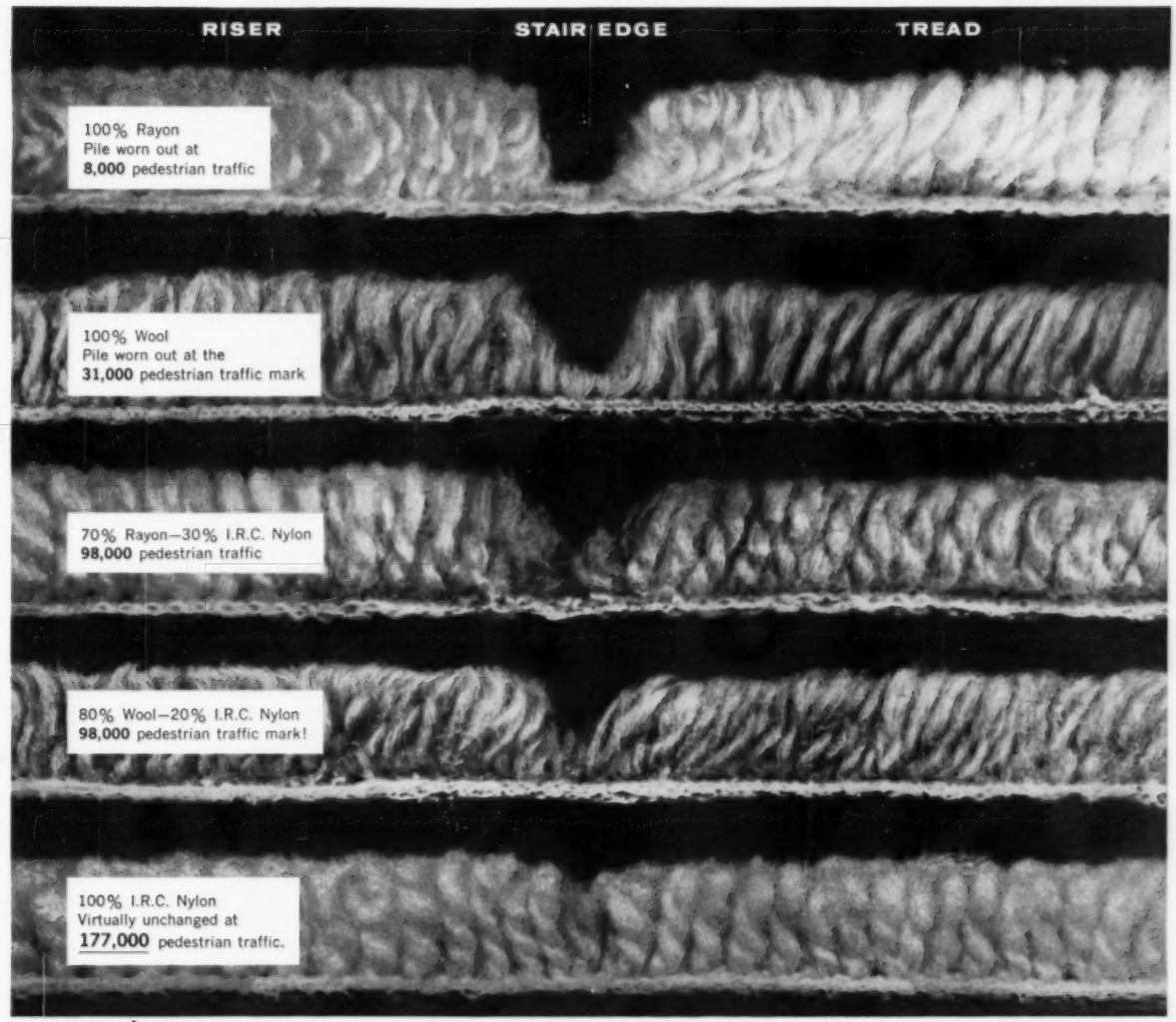
TEST NO. 2 . . . NYLON COMPARED WITH RAYON AND WOOL

CUT PILE CONSTRUCTION



WEAR... Nylon outwears every other carpeting fiber known. In these tests identical, unpadded strips of carpeting were laid on bare, rough steps in an industrial plant. The strips shown in the unretouched photographs were rotated regularly. 100% rayon was removed after stair edge wore out—at only the 8000 pedestrian mark! The 100% wool was stopped at the 31,000 pedestrian mark. The test for the 70% rayon/30% nylon and 80% wool/20% nylon were stopped at 98,000 and for 100% nylon at 177,000. In the test of acrylic fiber and wool with nylon, the photographs tell the story!

NOTE: Do not compare the tests on these two pages. They are two entirely different tests and have no relationship to one another.

THE NEW Nylon Staple I·R·C

INDUSTRIAL RAYON CORPORATION, 500 Fifth Avenue, New York 36, New York · 627 Guilford Building, Greensboro, North Carolina

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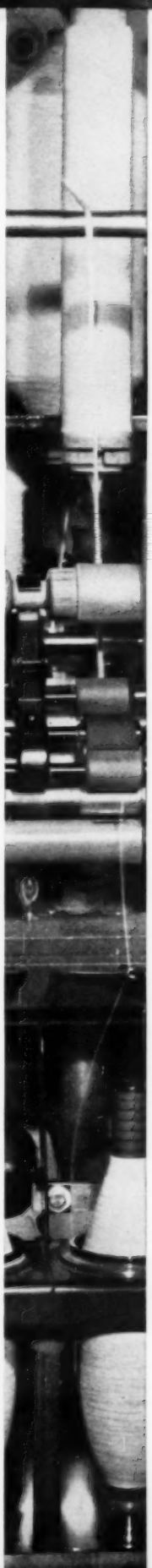


Smooth drafting action of Armstrong Accotex Aprons means top-quality yarn

On modern, high-draft frames, the right spinning apron can make a big difference in yarn quality. That's why mills everywhere have specified smooth-running Armstrong Accotex® Aprons for use on their equipment.

These aprons are precision-engineered to provide the smooth drafting action and good yarn control essential to high-quality spinning.

An important reason for this performance is the skilled compounding of the synthetic rubber compounds used in Accotex Aprons.

For example, on Accotex NO-7075 Aprons, the black outer surface is tough and abrasion-resistant. It has just the right surface friction to drive the top apron without slipping.

The white inner surface is smoother, yet it grips the drive roll firmly and moves over the pins without buckling or jamming. Special electrolytes added to this compound help to prevent accumulation of fibers on this inner surface.

The patented construction of Accotex Aprons also contributes to their outstanding performance. A strong, straight-line cord interliner eliminates stretching and curling while maintaining the flexibility needed for smooth operation.

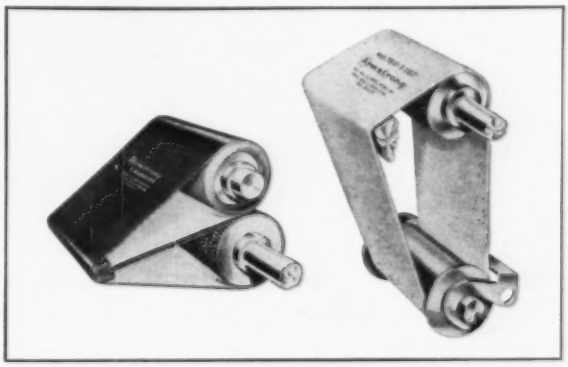
Careful rubber compounding and patented construction . . . combined with modern production methods . . . help produce a top-quality apron, one that will deliver strong, uniform yarn for years.

There's an Armstrong Accotex Apron specially engineered to help you get maximum performance from your equipment. If you're not already using these aprons, ask your Armstrong man to arrange for a test next time he calls. Prove on your own frames what an important difference in yarn quality Accotex Aprons can make. Armstrong Cork Company, 6402 Dauphin St., Lancaster, Pa.

Armstrong ACCOTEX APRONS

. . . used wherever performance counts

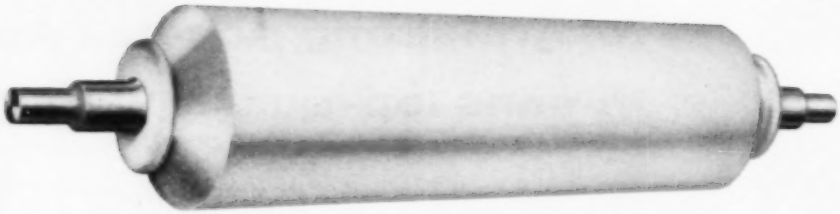
FOR DOUBLE-APRON SPINNING, use Accotex NO-7075 Aprons. Straight-line cord interliner assures non-stretch performance. For single-apron spinning, the NO-750 Apron gives the smooth drafting action needed for strong, uniform yarn.



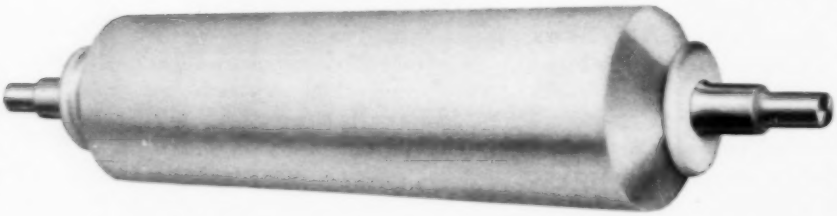
NOW! NEW MANHATTAN TEXTILE ROLLS

TEXTRACTOR ROLL

NEW crack-resistant cover and compounding methods extract *more* water . . . reduce crush on mangle roll!



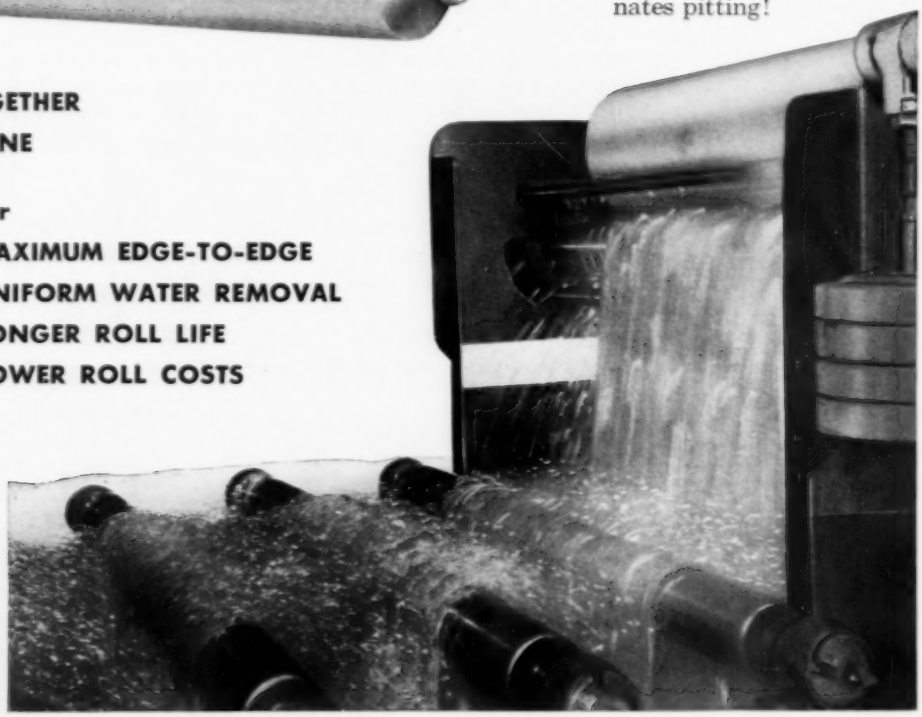
TEXROC ROLL



NEW hard white cover extracts up to *10% more water* than metal rolls . . . minimizes chemical and dye build-up and eliminates pitting!

BRING THEM TOGETHER ON *YOUR* MACHINE

for
MAXIMUM EDGE-TO-EDGE
UNIFORM WATER REMOVAL
LONGER ROLL LIFE
LOWER ROLL COSTS



RM822

ROLL COVERING PLANTS AT PASSAIC, N. J. • NEENAH, WIS. • N. CHARLESTON, S. C.
BELTS • HOSE • ROLL COVERINGS • TANK LININGS • INDUSTRIAL RUBBER SPECIALTIES

MANHATTAN RUBBER DIVISION — PASSAIC, NEW JERSEY

RAYBESTOS-MANHATTAN, INC.

Other R/M products: Abrasive and Diamond Wheels • Brake Blocks and Linings • Clutch Facings • Asbestos Textiles • Mechanical Packings • Engineered Plastics • Sintered Metal Products • Industrial Adhesives • Laundry Pads and Covers • Bowling Balls

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What do you expect of a textile fiber?

Rayon does it ... in color!

One of the big reasons for rayon's versatility is that it takes so well to color.

For any use from delicate fashion fabrics to practical washables, there is a wide range of quality National Dyes available to meet your processing specifications in any shade your designers can create.

You will find our coast-to-coast Technical Service Laboratories ready at all times to give fast service on recommended formulations.

Green Coat — Elfreda, Inc.

NATIONAL ANILINE DIVISION
ALLIED CHEMICAL & DYE CORPORATION
40 RECTOR STREET, NEW YORK 6, N. Y.

Akron Atlanta Boston Charlotte Chattanooga Chicago
Greensboro Los Angeles New Orleans Philadelphia
Portland, Ore. Providence San Francisco Toronto

NATIONAL ANILINE — Allied Chemical

USTER AUTOMATIC STRENGTH TESTER . . . .

PREDICTS YARN ACCEPTANCE

Uster's Automatic Strength Tester makes it possible for production management to know yarn reaches customers' standards before it leaves the mill. Complete statistical records of yarn samples predict acceptance, as well as reveal faults in prior stages.

The Uster Automatic Strength Tester eliminates 90% of the technician's time in *single strand testing*, making the operating cost well within the reach of any mill operation. Tension is controlled absolutely, removing all possibility of haphazard results in testing.

Adding the multiple bobbin attachment to the Uster Automatic Strength Tester permits continuous automatic testing from one to ten bobbins. Test groupings can be made of either 5, 10, 20 or 40 tests per bobbin.

Single strand strength and elongation, frequency distribution of breaking strength, percentage of elongation, sum of breaking strength and elongation —these are the facts learned from each sample tested.

The Uster Automatic Strength Tester is essential to the concept of CONTINUOUS QUALITY CONTROL THROUGHOUT MANUFACTURE.

TURN THE CRYSTAL BALL ON SINGLE STRAND TESTING COSTS! WRITE:

USTER

USTER CORPORATION
CHARLOTTE 8, NORTH CAROLINA

SALES OFFICES:

U. S. Sales Offices: Atlanta, Georgia; Needham Heights, Massachusetts

Canadian Sales Offices: Hugh Williams & Company, 27 Wellington St., East Toronto 1, Ontario

Unseen thread in the world's finest fabrics . . . Invisibly woven through the warp and woof of hundreds of high fashion fabrics is the unique contribution of Gulf Petro-engineering Service. It links you with 1300 Gulf scientists and technicians . . . keeps you abreast of new developments in petroleum science . . . gives answers to problems involving maintenance, lubrication, processing, fleet operations. Gulf Petro-engineering Service can improve mill production, save you money. It costs you nothing. How do you get it? Just call your Gulf Sales Engineer at your nearest Gulf office.

Gulf Oil Corporation, Dept. DM, Gulf Building, Pittsburgh 30, Pa.

GULF

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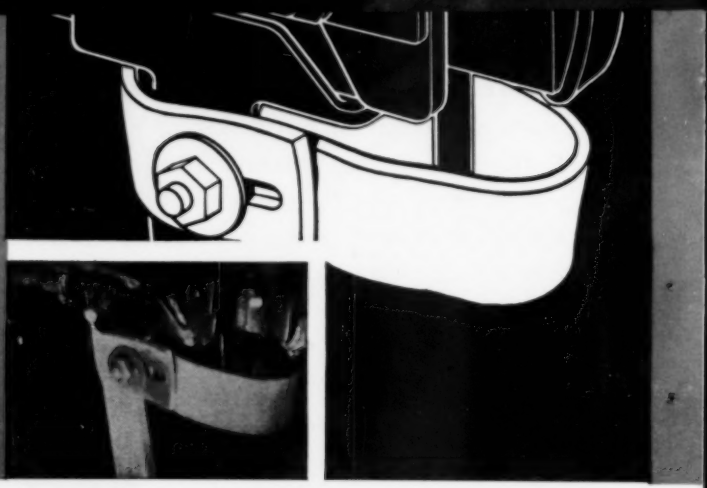
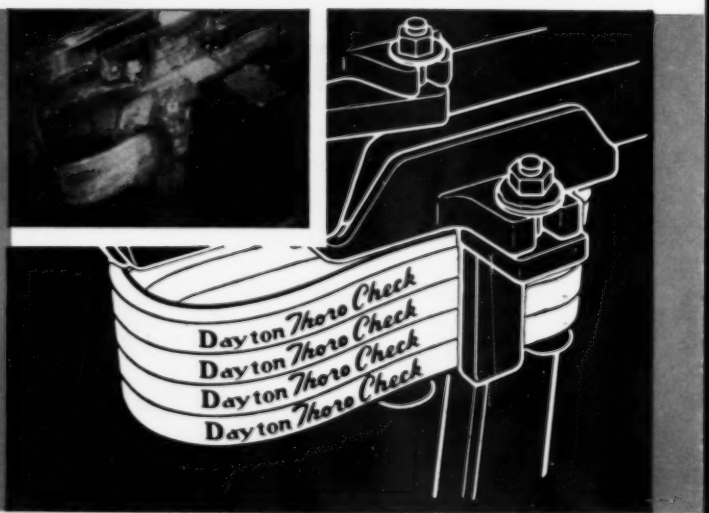
In these unretouched high speed photos (insert) you see for the first time the uncontrolled checking action of a side-clamped one-piece check strap. These artist's drawings show this action enlarged.



Positive proof of the superiority of Dayton Endless Thoro-Check Straps is seen in these unretouched photos taken at 2500 frames per minute. This action is enlarged in the artist's drawings.



High Speed Camera Reveals Action with

It happens so fast that no one has ever seen precisely how a check strap operates. That is, until Dayton photographed the action with a high speed camera exposing 2500 frames per minute. For the first time, you can see what actually happens in the less than 1/5 of a second it takes to cast the shuttle.

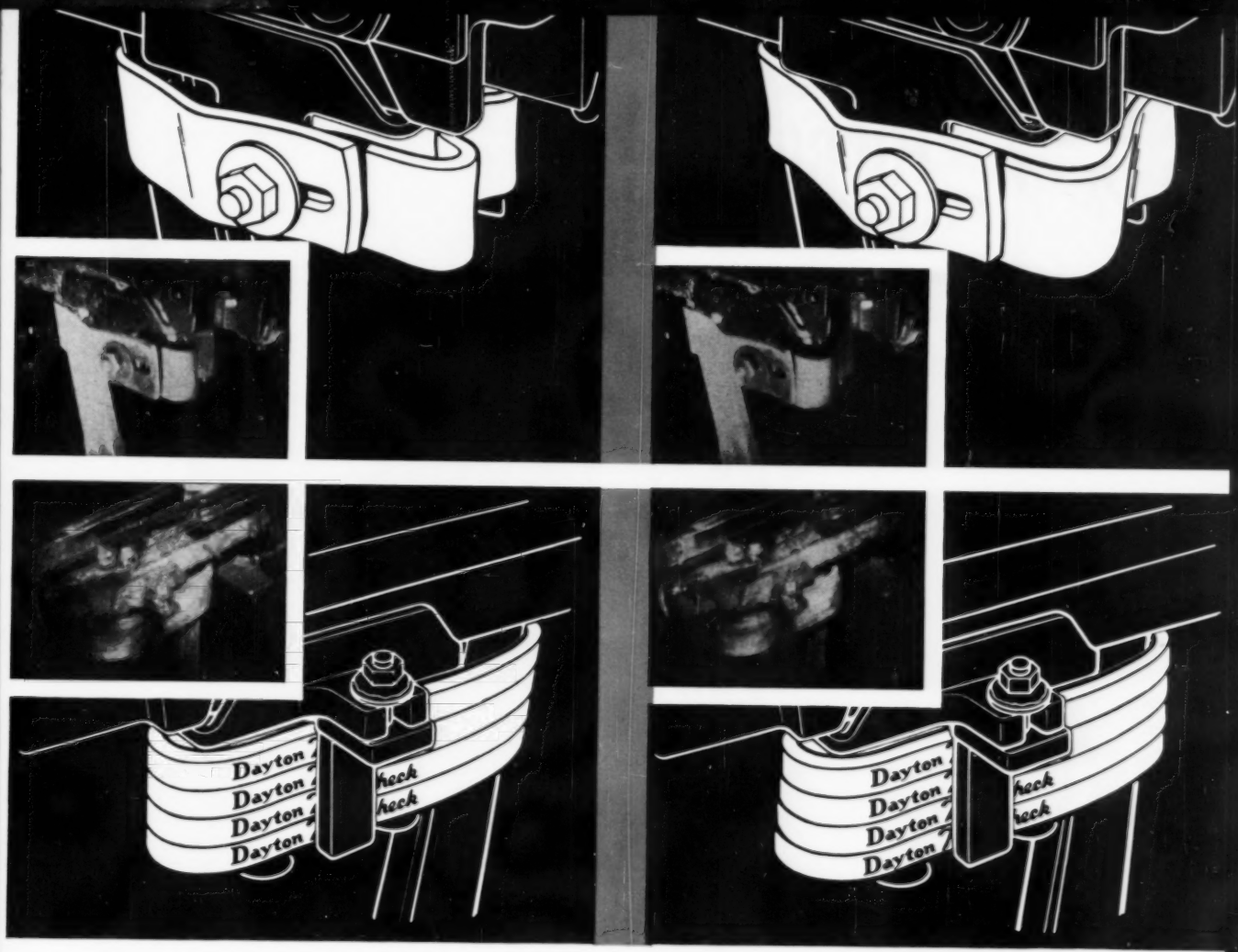
First, you see three unretouched frames taken from a film showing the action of a one-piece check strap. Photo #1 shows the picker stick midway in its stroke. Photo #2 shows how the one-piece check strap has begun to drag on the stick, interfering with the action. **You'll notice that the check strap** is starting to climb the face of the stick and is being severely stretched at a point just ahead of the clamp.

Now look at the loose end of the one-piece check strap in the second and third photos. The tuck which appears on the slack side of the strap indicates that the dragging action is so strong that the strap is jerked forward at an uneven rate of speed. (This action is impossible to see with the naked eye.)

With the hard wear they receive during this uneven checking cycle, it's no wonder that one-piece straps need constant adjustment and last only ⅓ to ½ as long as a set of endless Dayton ThoroCheck Straps.

Now, you'll want to see the action of a set of endless Dayton ThoroCheck Straps. The first of the three photos shows how the ThoroCheck Straps conform to the incline of the picker stick as it is whipped forward to cast the shuttle.

Photo #2 shows the Dayton ThoroCheck Straps



Perfect Checking Dayton ThoroCheck Straps

slowing the picker stick to a smooth, graduated stop. Notice that there is no deformation of the endless straps and no evidence of any jerking action.

Photo #3 demonstrates the controlled elasticity of the ThoroCheck Straps as they assume their original shape at the end of this action.

With the evidence before you, you can see why mill after mill reports that Dayton ThoroCheck Straps last longer, require less adjustment, and give vital shock protection to their looms.

If you'd like to see the actual film from which these photos were taken, ask your Dayton Representative when it will be available. Or, write The Dayton Rubber Company, Textile Division, 401 S. C. National Bank Building, Greenville, South Carolina.

Dayton Rubber

Dayco and Thorobred Textile Products for Better Spinning and Weaving

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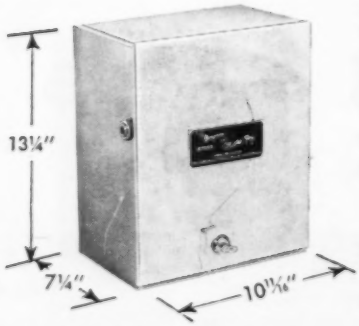
Norgren MICRO-FOG LUBRICATION

NEW...

Compact, Tamper-Proof Cabinet Units

lubricate all bearings, gears, chains and cams on a machine



1 QT. OR 2 QT. OIL CAPACITY
200 OR 300 BEARING INCH RATINGS

These new Norgren units provide ideal lubrication by applying just the right amount of air-borne oil fog to all bearing surfaces. The standard unit includes an automatic-drain air line filter, a solenoid valve, a pressure regulator, a pressure switch and a MICRO-FOG Lubricator . . . *and provides the following important advantages:*

- **TAMPER-PROOF** — Totally enclosed key-locked cabinet prevents tampering.
- **SPLASH-PROOF** — Coolant and corrosive liquids cannot reach interior of enclosure.
- **CONVENIENT TO SERVICE** — Removable one-piece top and side panel — secured by key lock — provides easy access for authorized personnel. Visual oil feed is proof of lubrication. Oil level gauge glass provided on lubricator.
- **SAFEGUARDS MACHINE COMPONENTS** — Pressure switch actuates alarm or shuts down machine if air pressure fails.
- **HEATER AND OIL LEVEL CONTROL OPTIONAL** — Thermostatically-controlled Heater, for 1 Qt. units, maintains uniform lubricant temperature and viscosity. Oil level control actuates alarm or stops machine when oil needs replenishing.

For complete information, call your nearby Norgren Representative listed in your telephone directory — or WRITE FACTORY FOR NEW No. 900 CATALOG.

C. A. NORGREN CO.

3404 SOUTH ELATI STREET — ENGLEWOOD, COLORADO

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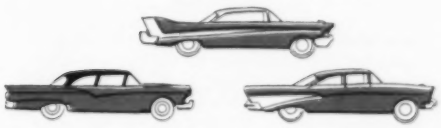
In automobiles, it's "the big three"



In colored yarns it's

Franklin-Dyed

for:–

QUALITY

We dye exclusively on the Franklin compressible spring. This permits uniform density of packages, which promotes uniform penetration of the dye liquor and uniform shades.

SPECIALIZATION

Yarn dyeing is our specialty. We act as yarn merchants to get dyeing, but we don't dye to make yarn sales. Our 5 plants and our entire organization have but one objective—to provide the best yarn dyeing service available.

CAPACITY

With 5 dye plants, hundreds of package dyeing machines in dozens of sizes and winding equipment to match, we are literally the largest package dyers in the world — ready to dye all types of spun fibres in any quantity.

CONSULTATION

We can help you with your color problems. We have unequalled laboratory facilities, a staff of highly skilled technicians and unequalled experience in time, variety and volume which are at your service.

AVAILABILITY

Our 5 yarn dyeing plants, strategically located in 5 different textile centers, are conveniently yours. Contact our nearest plant or office.

X-ray view of Franklin Package, the "secret" of uniform shades. Don't say "package dyed". Say "Franklin-Dyed".

Franklin Process

A DIVISION OF INDIAN HEAD MILLS

Dyers of cotton (carded, combed, mercerized) Orlon* (yarn & tow) Acrilan • Dacron** • Ban-Lon® • Helanca • Spun Nylon • Spun Rayon • Blends • Wool and Worsted yarn

Providence • Philadelphia • Greenville
Chattanooga • Fingerville, S. C.
New York Office — 280 Madison Avenue

*Trademark for Dupont's acrylic fibre
**Trademark for Dupont's polyester fibre

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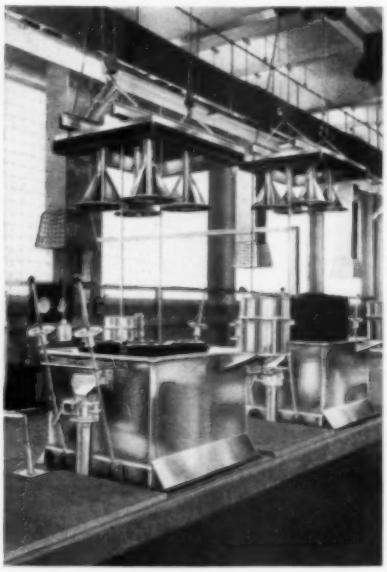
Stainless Steel Means ECONOMY

FOR MAXIMUM CORROSION-RESISTANCE and reduction of radiation loss this top dyeing machine is made from stainless steel, Type 316, by William Allen Sons Company, Worcester, Massachusetts. This equipment is easy-to-clean and does not deteriorate from daily contact with dye-bath chemicals. Units are equipped with vapor-tight covers to prevent steam loss, a factor made possible by non-corroding stainless.



Textile equipment fabricated from Republic ENDURO® Stainless Steel lasts and lasts. It produces immediate savings in maintenance and cleaning costs. Produces long-range savings in extended equipment life.

ENDURO stubbornly resists rust and corrosion. It is easy to clean and keep clean. It is solid stainless steel with no applied surface or coating to crack, chip, flake, or peel.

Flexibility is still another advantage of ENDURO-made equipment. You can use the same equipment for dyeing, rinsing, or bleaching. Easy-clean qualities make possible quick color changes so that small runs can be processed economically. It does not react with dye-bath chemicals. And because ENDURO does not absorb these chemicals, considerably smaller quantities are required to maintain necessary concentrations.

Your equipment supplier will give you more economical reasons for using equipment fabricated from Republic ENDURO Stainless Steel—the metal that brings you the two most wanted features in dyeing and bleaching equipment: true dyed colors . . . pure bleached whites. Contact him, or send us the coupon.

The advantages of stainless steel are brought to you by Republic in behalf of the stainless steel process equipment manufacturers and the independent steel distributors (local steel service centers) who supply them.

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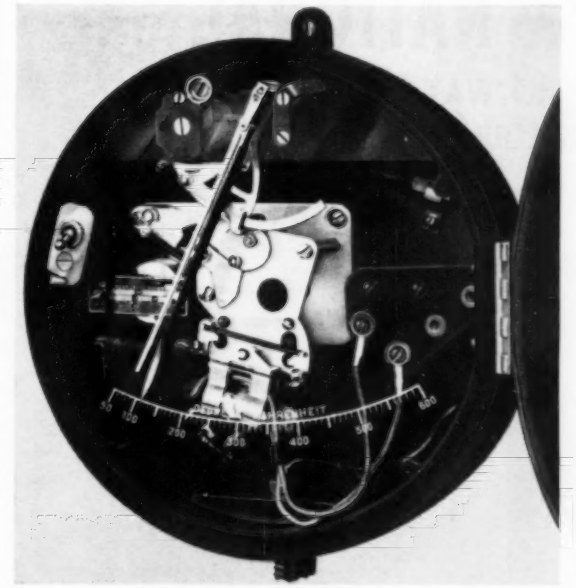
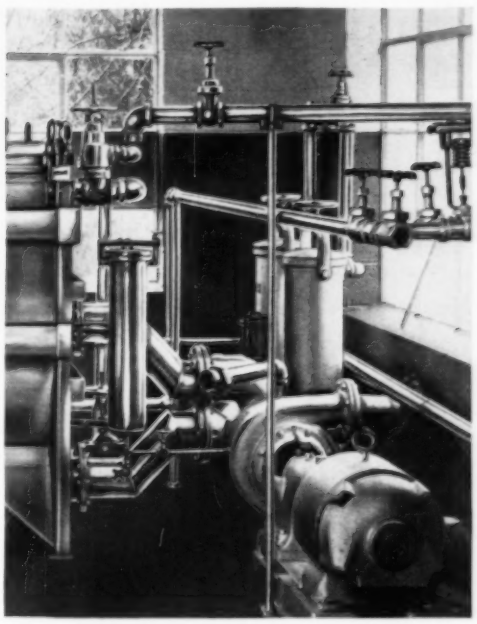


EXTENDED OPERATING LIFE of precision textile instruments exposed to corrosive atmospheres is made possible by the use of stainless steel for pointers, levers, cams, and pawls. This electric control thermometer is made by Brown Instrument Company, Philadelphia. Apply the high physical properties and corrosion-resistance of Free-Machining ENDURO Stainless Steel Bars to your textile machine parts. Two types, A.I.S.I. 416 and 430-F are fully 90% as machinable as Bessemer Screw Stock.

TO KEEP PIPE REPLACEMENT COSTS DOWN this mill installed Republic ELECTRUNITE® ENDURO Stainless Steel Pipe. It carries dyeing solutions without danger of contamination. It stubbornly resists rust and corrosion. Resists the corrosive action of most acids and alkalies. This quality pipe is an inexpensive investment in long-range economy. Send coupon for 60-page brochure.



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World's Widest Range of Standard Steels and Steel Products

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Send more information on:

☐ ENDURO Stainless Steel ☐ Free-Machining ENDURO Bars
☐ ELECTRUNITE Stainless Steel Pipe

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Two Reasons Why the Textile Industry Looks FIRST *to* "NATIONAL"...

FOR THE MODERN WAY TO MEET ALL ITS DRYING EQUIPMENT NEEDS

Leadership IN DRYING TECHNOLOGY PROGRESS

During the past thirty-seven years, "NATIONAL" research and design engineering have given to the Textile Industry consistently new concepts of drying procedures and equipment. Drying speed, efficiency and quality of textiles in all forms—from fibre to finished goods—have been revolutionized due in large measure to the patented features of "NATIONAL" design and construction.

One Source FOR ALL TYPES OF DRYING EQUIPMENT

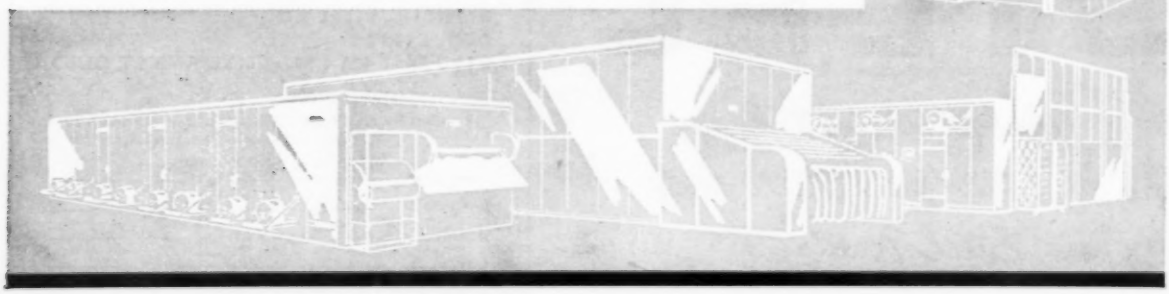
The list of "NATIONAL" dryers and conditioning units covers the full range of the Textile Industry's requirements—Piece Goods, Print Goods, Tenter, Roll, Carpet, Skein, Yarn, Rayon Cake, Package Yarn, Stock and Swatch Dryers; Nylon Heat Setting Machines.

Case histories of typical installations in the categories mentioned above will be gladly submitted upon request.

THE DRYING MACHINERY COMPANY

LEHIGH AVE. and HANCOCK ST., PHILADELPHIA 33, PA.

New England Agent: JONES & HUNT, INC., Gloucester, Mass.
Cable Address: "NADRYMA"—W. U. Code



JENKINS

O.S.&Y. U-BOLT GATE

MADE BETTER THAN NEED BE...

Costs Less to Use

YOU PAY NO MORE for the extra quality you see in every part of a Jenkins Outside Screw & Yoke U-Bolt Gate valve. Yet longer life and reduced maintenance is bound to result from the extra ruggedness, the precision manufacture and unique design features which Jenkins puts into these popular, general utility valves.

Choose the Outside Screw & Yoke pattern for services where spindle threads must be kept out of the destructive effects of fluids in the line; where spindle threads must be cleaned and lubricated regularly or where a rising spindle is needed to indicate wedge position.

Choose JENKINS, whether O.S. & Y. or Inside Screw pattern, for valves built to save maintenance dollars.

WIDE RANGE OF JENKINS U-BOLT GATES

GET FOLDER NO. 207 which describes Inside Screw and O.S. & Y. patterns . . . Iron Body with Bronze or Stainless Steel Mounting . . . All-Iron and Ni-Resist with type 316 Stainless Steel trim. Ask your local Jenkins Distributor or write Jenkins Bros., 100 Park Avenue, New York 17.

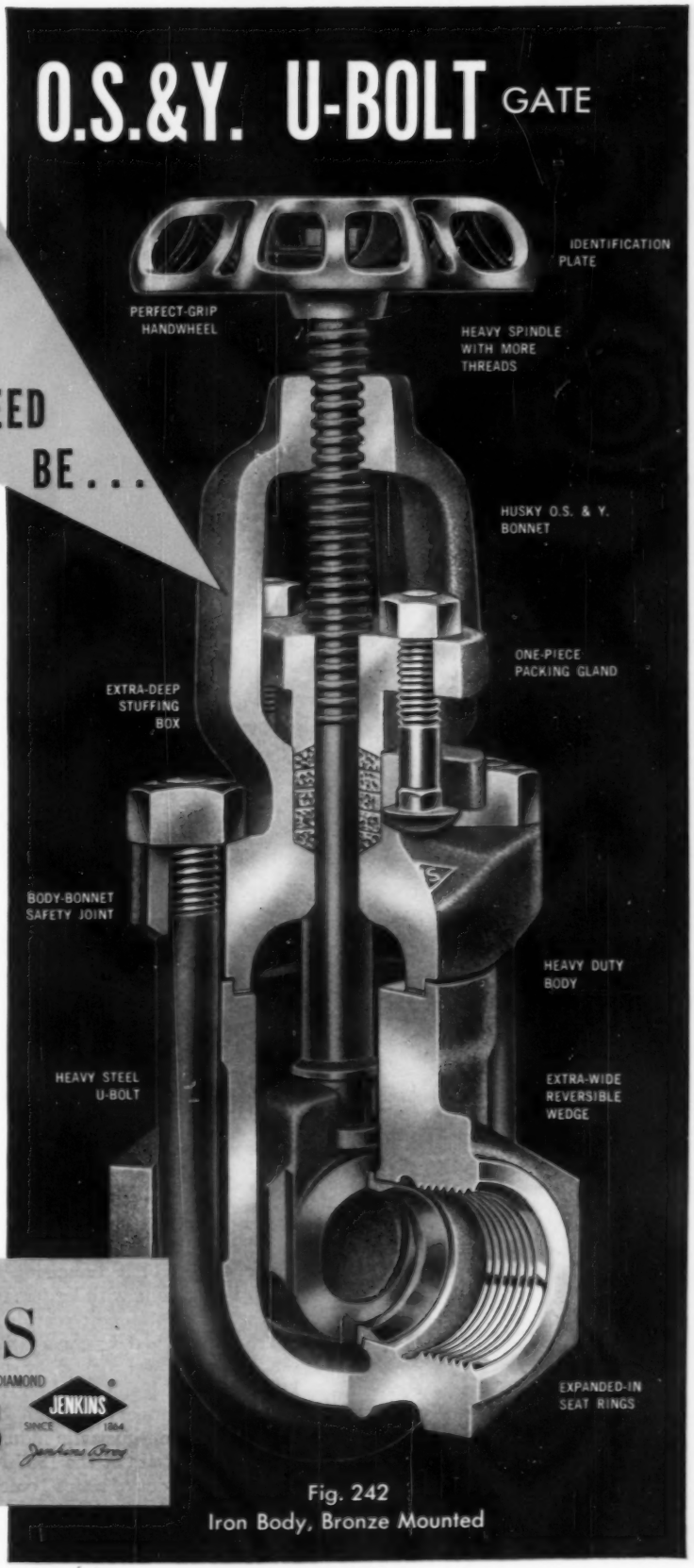


Fig. 242
Iron Body, Bronze Mounted

JENKINS
LOOK FOR THE JENKINS DIAMOND
VALVES
JENKINS SINCE 1864

Sold Through Leading Distributors Everywhere

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No. 4 in a series—how your Du Pont salesman is backed by many sales-building activities including Fiber Research, Technical Service, Fabric Development and Merchandising.
just a hint of a tint

An ounce of **COLOR**—a pound of cure

In our picture, at The J. L. Hudson Co., Detroit, Jack Townsend, Du Pont merchandising representative, talks over results to date of one of Du Pont's advertising and merchandising programs.

Du Pont, along with leaders in the industry, recognized steps had to be taken to stem the eight-year decline in hosiery sales and prestige. In 1956 Du Pont surveyed women's attitudes toward hosiery to find out why they buy and wear (or leave off) stockings. Acting on the results of this survey, Du Pont laid plans to re-activate women's thinking in terms of color when buying hosiery.

Backed by enthusiastic industry affirmation, Du Pont formally introduced its program at the 1957 National Hosiery Manufacturers Convention. "Just a hint of a tint" emerged as the compelling theme of the most

FROM RAW FIBERS TO RETAIL SALES . . .

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for the hosiery industry

comprehensive hosiery advertising program in history. Fashion shows impressed the theme on fashion and public press. Du Pont supplied retailers with a long list of selling aids including an 18-minute sales-training movie. A continuing campaign of full-color advertisements carried "Just a hint of a tint" to the consumer. Du Pont's activities served as a rallying point. The hosiery industry and retailers multiplied the effort. Results to date indicate a brighter outlook for the hosiery industry . . . through color.

Du Pont believes it can increase the market for its fibers and thus benefit its customers by providing useful assistance to all levels of the textile industry. It's through your Du Pont sales representative that you, as a customer, have access to a range of technical and merchandising information unique in the textile industry.

Product and Process Notes from Du Pont

Reduced Fiber-to-Metal Friction—Development work by Du Pont in yarn spinning has led to a method of reducing fiber-to-metal friction. This method calls for a matte finish (vapor blast plus chrome plating) on metal surfaces of textile machinery such as coiler tube gears, drawing spoon guides, doffer combs, roving flyers, spinning pencil rolls and guide surfaces. Use of this technique to date has resulted in processing improvements for "Dacron"* polyester staple. Check with your Du Pont representative for possible application in your mill.

Textured Nylon as Base Yarn—The use of textured nylon as a base yarn with spun "Orlon"** acrylic fiber yields fabrics with good bulk and size flexibility. Nylon contributes strength and durability; helps maintain washability and dimensional stability. These fabrics provide new opportunities in end uses such as sweaters and socks. Ask your Du Pont sales representative for more information.

Nylon on Draw-Wound Tubes Improves Processing—The use of draw-wound tubes in place of bobbins will improve processing for reverse twist to obtain S and Z plied yarns. These tubes are now available in all deniers.

Denier Blends of "Orlon"—Blending deniers of "Orlon" can provide fabrics which range in hand and type from cashmere-like through shetlands, alpacas, and worsteds to coarser fabrics. 2, 3, 4.5, 6 and 10 deniers are available in regular and high-shrinkage staple.

Technical Information Bulletins—contain detailed, practical information on Du Pont product and process developments. They cover fiber properties, mill processing, dyeing, finishing and fabrication. Refer to your copies frequently; they can save you time and money. To be sure you have all the bulletins you need—check with your Du Pont salesman or Technical Service representative.

*Du Pont's registered trademark for its polyester fiber.
**Du Pont's registered trademark for its acrylic fiber.

DU PONT
REG. U.S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING
. . . THROUGH CHEMISTRY

DU PONT BUILDS PROFITS FOR YOU

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An important message to all mill men!

HERE'S WHAT YOU SHOULD CONSIDER BEFORE YOU BUY SUCTION CLEANING

Do you know what to look for and look out for when buying a suction cleaning system? Basically, all systems are designed to pick up an end down, but, (and this is important) there are other things which must be considered. Things that will assure you of even greater profits from your investment. Read and understand the following; they will help you in selecting the equipment best designed to serve you.

AIR QUANTITY

The cleaning ability of a collection system is based on the amount of air the system will take in at a particular pressure.

The more air taken in per spindle, the more fly is trapped and carried away before it settles on frames, floors, and running work. The more air the system picks up, the faster the air change in the spinning room and the sooner the conditioned air is brought down into the drafting area where it is really needed. Once you have this evening out of humidity, a more constant control and a more even temperature can be maintained throughout the spinning room.

PRESSURE

Pressures in excess of a certain minimum required to do the job, do not substantially improve end pick-up.

This minimum can vary with different materials being processed, and only through years of testing all kinds of material under actual mill conditions do we know what these minimum pressures are. The important thing to remember is to move as large a quantity of air as possible without exceeding necessary orifice pressures. To increase your orifice pressures would mean a sizeable increase in your operating horsepower and room heat load.

HORSEPOWER

The system you want should move the highest cubic feet per minute per horsepower, i.e. more cleaning per horsepower.

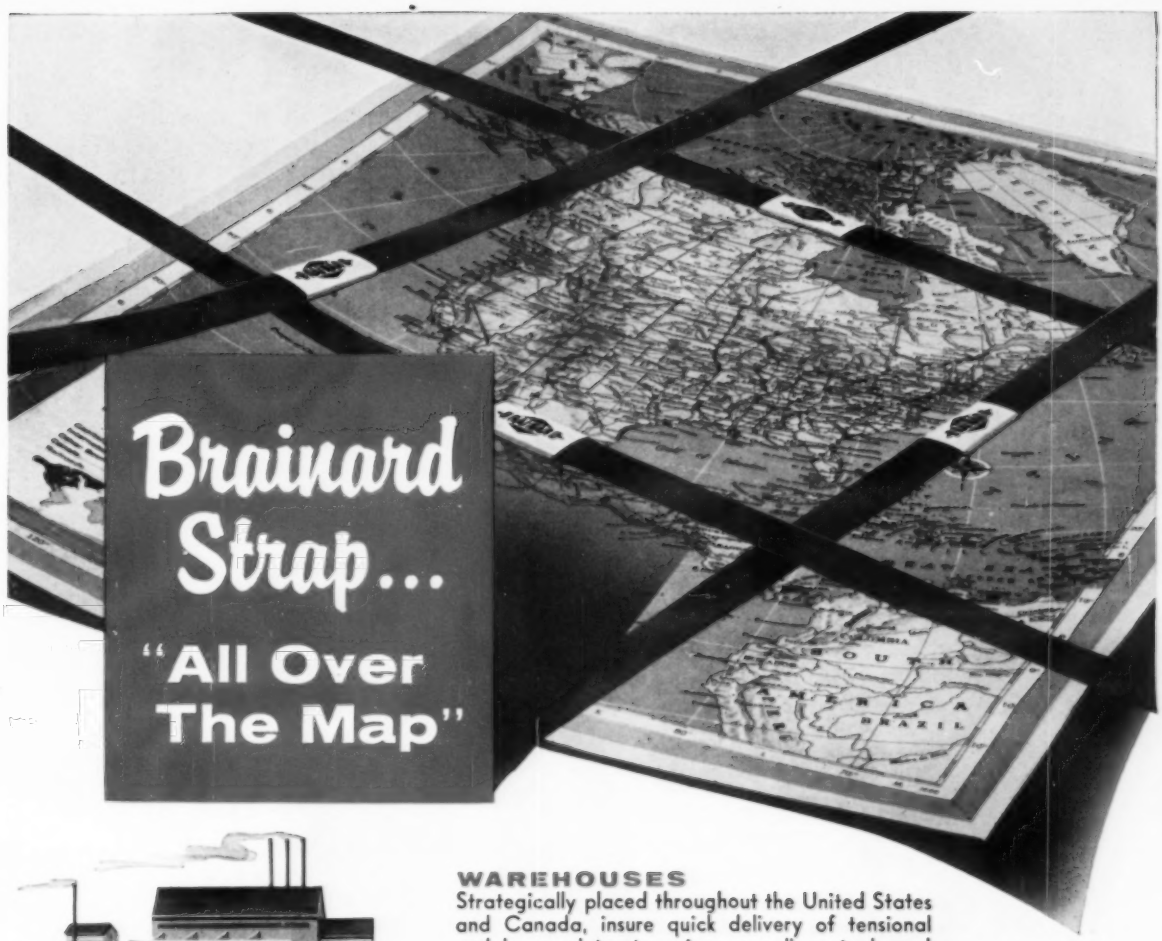
Obviously you want the equipment that can move the highest cubic feet of air per minute without increasing the horsepower. Higher cubic feet per minute means more cleaning and filtering of room air more often. Be sure you know how many cubic feet per minute you are getting per horsepower before you buy. This is one tangible way of measuring the economy of suction equipment.

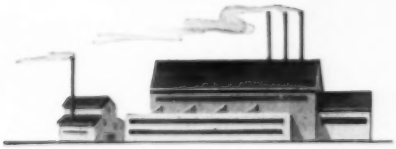
All suction equipment manufactured by Pneumafil Corporation is specially engineered to handle the most air at the lowest necessary pressures and operating horsepower. To you this means cleaner, stronger, better quality yarn with fewer slubs. You can increase front roll speeds to give you more production. You'll save on power requirements too, add less heat, have a faster air change in the spinning room, and you'll maintain better all round room conditions. Yes Sir, when you buy Pneumafil, you are assuring yourself of a greater return from your investment . . . today and tomorrow!

For more information please contact

PNEUMAFIL CORPORATION PNEUMAFIL® **CHARLOTTE 8, N. C.**

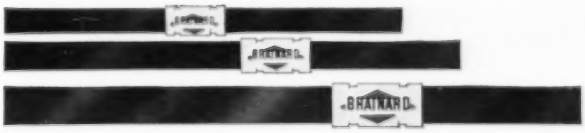
© 1958 Pneumafil Corp.





WAREHOUSES
Strategically placed throughout the United States and Canada, insure quick delivery of tensional and heavy duty strapping as well as tools and other strapping supplies.

POWER TOOLS
For stretching and cutting both heavy duty and tensional strapping, the latest development in modern production strapping.



QUALITY STRAPPING
As a division of Sharon Steel, Brainard's integrated production insures a constant supply of high quality, heavy duty and tensional strapping in all standard sizes and gauges.

Brainard's Steel Strapping is more than a product, it is a system of specifically designed tools and accessories for the most modern of packaging and material handling. Brainard's Strapping service is available throughout the United States and Canada.

Brainard Steel Strapping

Brainard Steel Division, Sharon Steel Corporation
Larchmont Avenue, Warren, Ohio

SHARONSTEEL

569

BRAINARD STEEL STRAPPING DIVISION
WARREN OHIO

Please send me more information about BRAINARD Steel Strapping.

NAME_____
COMPANY_____
ADDRESS_____
TITLE_____

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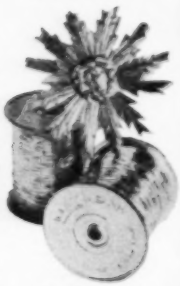
the sun shines



indoors and out...

in easy-care fabrics set aglow through the miracle of

METLON

metallic yarns

SHIMMERING METLON SUN-BEAMS WILL STAY FOREVER AGLEAM. NEITHER WASHING NOR CLEANING CAN HARM THESE DELIGHTFUL YET DURABLE FABRICS! SUN-LOVERS ALL. DRAPERY AND UPHOLSTERY FABRICS BY **TITUS BLATTER**; WASHABLE DRESS BY **JEANNE**, FABRIC BY **FULLER**; BEACH SHEET BY **DUNDEE**; IVY LEAGUE TOP AND SHORTS BY **GERTRUDE DAVENPORT**, GLITTER-TERRY BY **CONE**; MELON-AND-METLON-WEBBED CHAISE BY **LAWNLITE**, AT **MACY'S** AND OTHER FINE STORES.

METLON CORPORATION, 432 FOURTH AVE. NEW YORK 16, N. Y. MAKERS OF METLON AND METLON WITH MYLAR®, A SUBSIDIARY OF ACME BACKING CORPORATION.

®DUPONT & POLYESTER FILM ®FIRESTONE T. M.

THIS AD WILL APPEAR IN FULL COLOR IN THE FEBRUARY ISSUES OF GLAMOUR AND LIVING FOR YOUNG HOMEMAKERS

METLON® IS GETTING INTO EVERYTHING...

shining forth in sun-clothes and smart outdoor furniture, as well as in every room in the house! Sparkling, soft-touch Metlon metallic yarns can go everywhere without a care . . . into washing machine or cleaning fluid . . . into blazing sunlight or salt sea air . . . without losing one iota of their shimmery appeal. Metlon can add excitement to your merchandise, too. Why not look into it now?

METLON CORPORATION • 432 FOURTH AVE., NEW YORK 16, N.Y.

A subsidiary of Acme Backing Corporation

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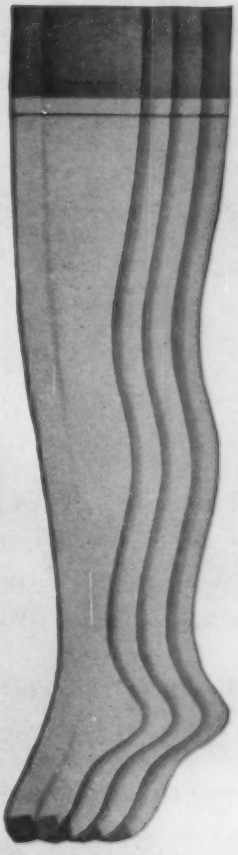
NOW...

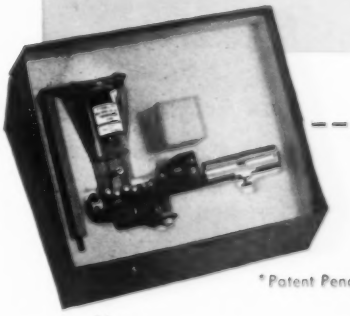
SIMPLIFIED LENGTH CONTROL

JUST $25.00 !



- Easily installed *in minutes*
- Permits use of new free-running pirns
- Maintains uniformity of stitch construction
- No wearing parts—no maintenance
- Completely self contained
- Tension adjustable in 1/10 gram increments
- Adaptable to *all* makes of Seamless Knitting Machines
- Maintains s-t-r-e-t-c-h specifications

ONLY FIDELITY GIVES YOU LENGTH CONTROL *PLUS* YARN TENSIONING *PLUS* COMPENSATING—at a fraction of the *cost* for other length control devices *alone!* Mail this coupon for details *today.*



I want to know more about the Fidelity Yarn Tensioner and Compensator.*

☐ Send additional technical information

☐ Have Fidelity representative call ☐ My purchase order is enclosed

Name _____ Title _____

Company _____

Address _____

*Patent Pending

Designers and Builders of Intricate, Automatic Precision Machines

SINCE 1911

FIDELITY MACHINE COMPANY, INC.

3908-18 FRANKFORD AVENUE, PHILADELPHIA 24, PA.

EXPORT DEPT.: 11 BROADWAY, NEW YORK 4, N.Y.

SOUTHERN REPRESENTATIVE: C. S. BRANNOCK, P.O. BOX 763, MT. AIRY, NORTH CAROLINA

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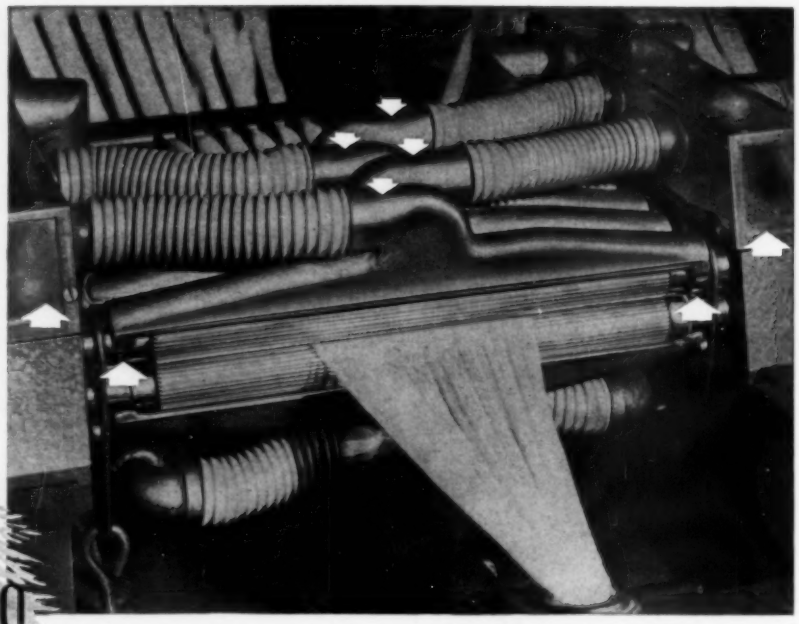
Way Out in front



Feathertouch

DRAFTING'S New Vacuum Cleaning*

It Cleans the ROLLS Each top and bottom roll has its own, individual, full-length, close-fitting cleaner. This gently picks up dirt, trash, and fly *from the rolls* instead of sucking them forcibly from the web. Mill tests show that less than 1% of the collector waste consists of good staple. Note that the vacuum action extends beyond the sliver and over the journals. Flexible tubing adjusts automatically to any roll setting.

Individual Frame Units Each frame has its individual vacuum system and collector box . . . and each delivery has its own plastic viewing section for visual observation of performance.

Better Quality Sliver Tests show that Ideal's Vacuum System eliminates slubs and removes a greater percentage of dirt, trash, and fly.

90% Less Cleaning Time No top or bottom clearers to pick. Has no wipers and no parts rubbing.

Increased Production This Vacuum Cleaning System permits fuller utilization of Ideal Featherouch Drafting's tremendous potential speed. Records show a sustained speed of 370 feet per minute.

Does Not Increase Frame Height

*Patent Pending

Ideal Industries, Inc.
Bessemer City, N.C.

Eliminate costly lubrication down-time... increase yield at lower operating cost with Lincoln CENTRALIZED LUBRICATION SYSTEMS

On Owens-Corning flyer twisters . . . down-time eliminated by modern automatic lubrication

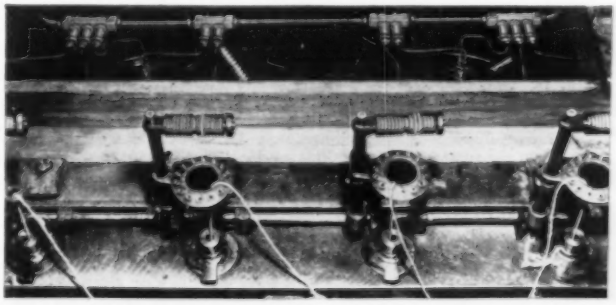
"There's no more down-time due to faulty lubrication, thanks to Lincoln. As a result of the use of Lincoln Centralized Lubrication Systems on high-speed textile flyers, twisting yarns in our Ashton plant, there has been no loss of production due to improper lubrication. We find Lincoln's Centralized Lubrication System very reliable, since it is fully automatic."

Reports E. Bay, Chief Engineer, Owens-Corning Fiberglas Corp.

You can be *automatically* sure of supplying the right quantity, at the right time with Lincoln Centralized Systems. These Power Lubrication Systems apply viscous fluid lubricants to bearings on individual machines or automated production lines, at predetermined time intervals . . . unerringly . . . automatically . . . while the machines are operating!

Textile mills and plants throughout the country have made impressive cost savings and production gains with these modern Lincoln installations. Call your nearby Lincoln Distributor. Write for Bulletins 811 and 806-R.

● View shows Lincoln CentrOmatic* Pump . . . serves distribution system of lubricant injectors connected to machine bearings.



● Lubricant injectors, one for each bearing, are permanently attached to bearings by steel feed lines.

*Trade Name Registered

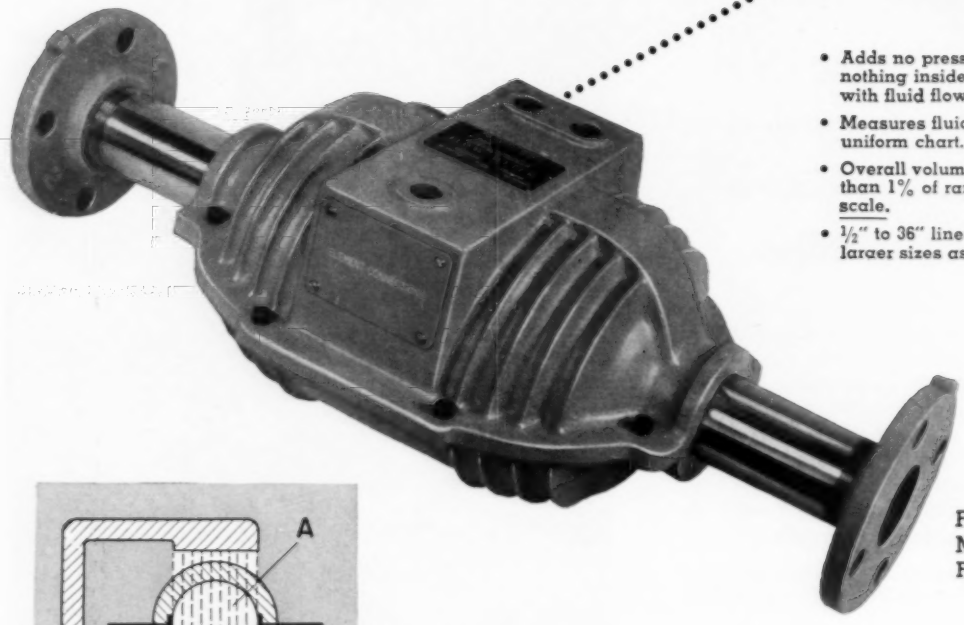
Lincoln
THE MOST TRUSTWORTHY NAME IN LUBRICATING EQUIPMENT

LINCOLN ENGINEERING COMPANY
Division of The McNeil Machine & Engineering Co.
5743 Natural Bridge Avenue • St. Louis 20, Missouri

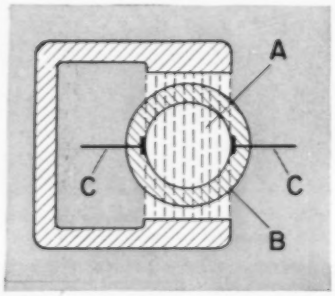
For more data, write this page number on Reader-Service card. →

NOW! a flow meter with no flow restrictions!

- Adds no pressure drop — nothing inside pipe to interfere with fluid flow.
- Measures fluid velocity directly on uniform chart.
- Overall volumetric accuracy better than 1% of range over entire scale.
- ½" to 36" line sizes standard — larger sizes as required.



FOXBORO MAGNETIC FLOW METER



SIMPLE, TROUBLEFREE, OPERATION

The Foxboro Magnetic Flow Meter operates on the same principle as a power generator. A magnetic field (A) is maintained through a standard pipe section (B) of stainless steel or other non-magnetic material. This pipe section is lined with Kel-F® or other insulating material. Liquid passing through pipe acts as moving conductor, generating an electric voltage which varies in proportion to liquid's average velocity. Flush electrodes (C) in pipe wall "pick up" this voltage which is recorded in desired flow units by Dynalog Electronic Recorder or Controller.

For corrosive chemicals, dye liquor, latex, mill waste effluent, and other textile mill liquids of any consistency — this entirely new-type meter accurately measures flow *magnetically*. It completely ignores such common metering headaches as turbulence, suspended solids, and variations in conductivity, density, and viscosity. It even measures reversing flows! The ½-inch meter is ideal for small, critical flows of acetic acid and other costly liquids.

Installation is simple. The magnetic spool piece connects into the line like any equivalent length of pipe — no seals, purges, meter runs, or straightening vanes required. Connects by standard cable to remote Dynalog Electronic Recorder.

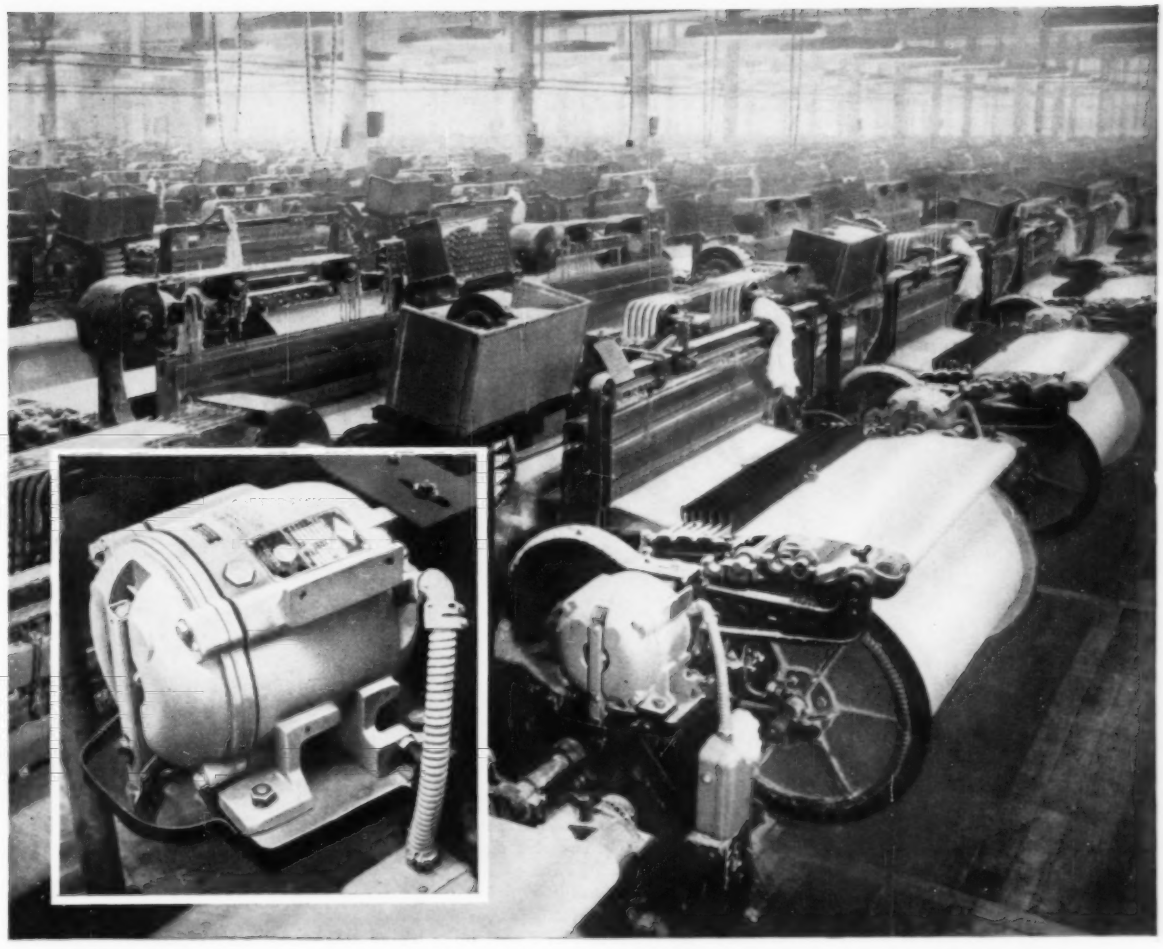
Maintenance is practically eliminated. There are no pressure taps to become plugged or frozen, no working parts to foul.

For complete details of the Foxboro Magnetic Flow Meter, write for Bulletin 20-14B.

THE FOXBORO COMPANY, 842 NEPONSET AVENUE, FOXBORO, MASS., U.S.A.

FOXBORO
REG. U. S. PAT. OFF.

First in FLOW METERING



AT CONE MILLS

DIEHL transmitters improve product quality

Three hundred Draper looms powered by the latest type DIEHL Power Transmitters were recently installed as part of an important new modernization program at Cone Mills Corporation's Minneola Plant, Gibsonville, N. C., with most satisfactory results in the improvement of loom performance and product quality.

DIEHL Power Transmitters were developed especially for Draper looms, and feature a fast, positive clutch-brake mechanism combined with an inverted type motor which provides high inertia without need for a separate flywheel. This design produces a constant steady pull for more efficient weaving and better quality greige goods, in the opinion of a plant official. "Increased efficiency of looms will be joined by lower operating costs because of the combination of Draper X2 looms and DIEHL Transmitters," he said. The looms now run at 186 picks per minute.

Cone Mills plant officials are favorably impressed with the positive action of the clutch-brake mechanism, the pinion driving shaft construction which eliminates the thrust bearing on the loom, the speed and ease of removal and replacement of the transmitter for inspection and servicing, the totally enclosed housing design which protects against weave room lint and fly, and the negligible maintenance and down-time costs.

DIEHL Power Transmitters can increase production and efficiency—at lower operating costs and less down-time—in your mill. Specify them for your looms.

Diehl

DIEHL MANUFACTURING COMPANY
Electrical Division of
THE SINGER MANUFACTURING COMPANY
Finderne Plant, SOMERVILLE, N. J.

☐ Please send me Consolidated Motor Catalog and Price List No. TW-2 3540

☐ Please send me Textile Motor Bulletin No. TW-2 3526

NAME _____

COMPANY _____

STREET _____

CITY _____ ZONE _____ STATE _____

Baltimore • Chamblee, Ga. • Charlotte • Chicago • Cincinnati • Los Angeles • Milwaukee • Needham, Mass. • New York • Philadelphia • Syracuse

For more data, write this page number on Reader-Service card. →

Setol Cleanser HAS WHAT IT TAKES TO MACHINE-SCRUB OILY FLOORS—

Faster cleaning action!

Cuts operating time of the scrubbing machine

Finnell 213P Scrubber-Vac

Applies cleanser, scrubs, and picks up — in ONE operation!

Because *Setol* is specially compounded for the greater speed of *combination-machine-scrubbing*, it must *and does* work faster than average alkaline cleansers. *Setol* saponifies *and emulsifies* grimy oil and grease *instantaneously*. The wetting agent in *Setol floats the oil* for fast, easy, *and thorough* removal by the vac of a *combination machine* or with a separate vac unit. And because *Setol* stays fast-acting longer—does not spend its strength quickly as do ordinary oil and grease solvents — less is required to clean a given area. Thus *Setol* saves on materials and, by speeding the cleaning process, cuts operating time of the scrubbing machine . . . reduces labor costs . . . and saves on brushes. Best of all, *Setol gets floors oil-free clean!* Also acts as a disinfectant (contains pine oil), and leaves a pleasant, clean aroma.

- **A constant, fast-acting cleanser for machine-scrubbing cement, wood, wood block, metal, stone, and terrazzo floors**
- **Consistent use on cement floors prevents cement dusting . . . provides a finish that helps seal out waste materials**

For demonstration, consultation, or literature, phone or write nearest *Finnell Branch* or Finnell System, Inc., 1902 East Street, Elkhart, Indiana. Branch Offices in all principal cities of the United States and Canada.

FINNELL SYSTEM, INC.

Originators of Power Scrubbing and Polishing Machines

Everything FINNELL For Floor Care

BRANCHES IN ALL PRINCIPAL CITIES

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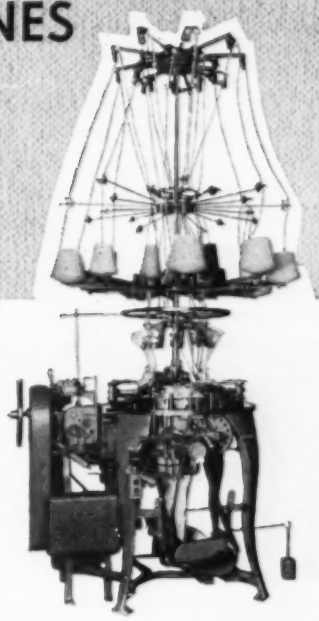
LEIGHTON TRANSFER MACHINES

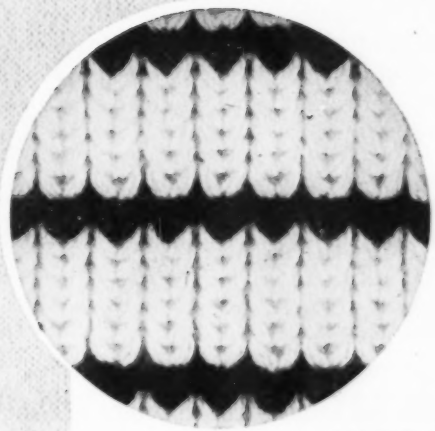
give you High Production . . .

Even on Ban-lon!



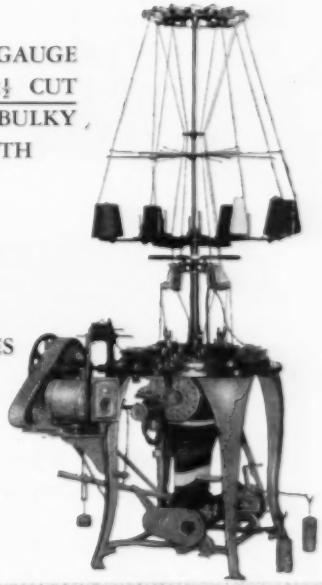
LEIGHTON TRANSFER MACHINES ARE ESPECIALLY ENGINEERED TO HANDLE NEW SYNTHETIC YARNS AS BAN-LON AND ORLON. FIELD TESTS IN MILLS HAVE PROVEN LEIGHTON MACHINES TO HANDLE THESE NEW MATERIALS ON A SATISFACTORY PRODUCTION BASIS USING 14 CUT TRANSFER MACHINES.

. . . OR LEIGHTON'S BULKY KNITTER

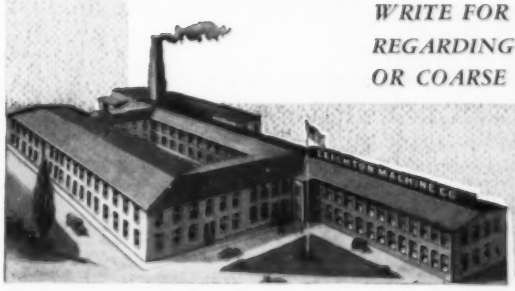


LEIGHTON'S COARSE GAUGE RACKING MACHINES 2½ CUT — GIVE YOU TRUE BULKY STITCH SWEATERS WITH FULL STITCHES

THESE MACHINES ARE AVAILABLE IN 2½—3—4—5 CUT AND KNIT UP TO 3 COLOR STRIPES



WRITE FOR FURTHER INFORMATION REGARDING LEIGHTON'S TRANSFER OR COARSE GAUGE MACHINES.



LEIGHTON MACHINE COMPANY

··· MANCHESTER, NEW HAMPSHIRE ···

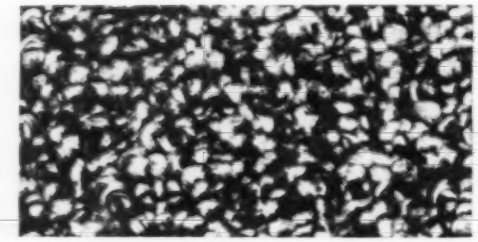
MFGRS. OF CIRCULAR LATCH NEEDLE KNITTING MACHINES

For more data, write this page number on Reader-Service card. →

Celanese Special Acetate Staples

"target fibers"—engineered for specific end-uses

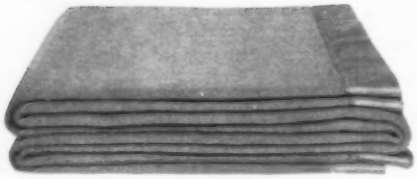
These special types are available in addition to the Regular Acetate Staple Fibers for apparel and home furnishings use. Developed by Celanese research, proven in use, these unique Acetate Staple Fibers are *specially engineered for top performance in specific end-uses.* Mills testify these are "fibers without headache," easy and economical in production. And Celanese not only delivers its fibers, but its technical knowledge as well.



TYPE HC. Celanese high crimp acetate, engineered for carpets. Absolutely tops in tufts. It can be permanently heat set. It takes superb color, cross-dyes beautifully. *Important:* HC enables mills to process coarser deniers on cotton systems for greater efficiency, better pricing.

TYPE K. Engineered specifically for piliows and comforters. This pure white, non-allergenic fiber is exceptionally light and resilient. It processes economically, efficiently, and is priced for volume consumption.

TYPE F. Engineered for mattresses, mattress pads, upholstered furniture, sleeping bags and other end uses. Pure white, mildew and moisture resistant, non-allergenic and comfortably resilient, it gives top performance at low cost.



TYPE D. Special acetate staple engineered for blanket type fabrics.

Celanese ®

Most available in a range from 2 to 50 denier in various cut lengths and in bright and dull lustres. Celanese Corporation of America, Textile Sales Division, Charlotte, North Carolina.

District Sales Offices: 180 MADISON AVE., NEW YORK 16, N. Y.
ROOM 10-141 MERCHANDISE MART, CHICAGO 54, ILLINOIS • P. O. BOX 1414, CHARLOTTE 1, N. C.
200 BOYLSTON ST., CHESTNUT HILL 67, MASS. • 819 SANTEE ST., LOS ANGELES, CALIFORNIA
Export: AMCEL CO., INC. AND PAN AMCEL CO., INC., 180 MADISON AVE., NEW YORK 16, N. Y.
Canada: CHEMCELL, CANADIAN CHEMICAL & CELLULOSE CO., LTD., 2035 GUY ST., MONTREAL

Celanese CONTEMPORARY FIBERS

ARNEL® TRIACETATE • FORTISAN®-36 RAYON • CELACLOUD ™ ACETATE • VISCOSE • RAYON

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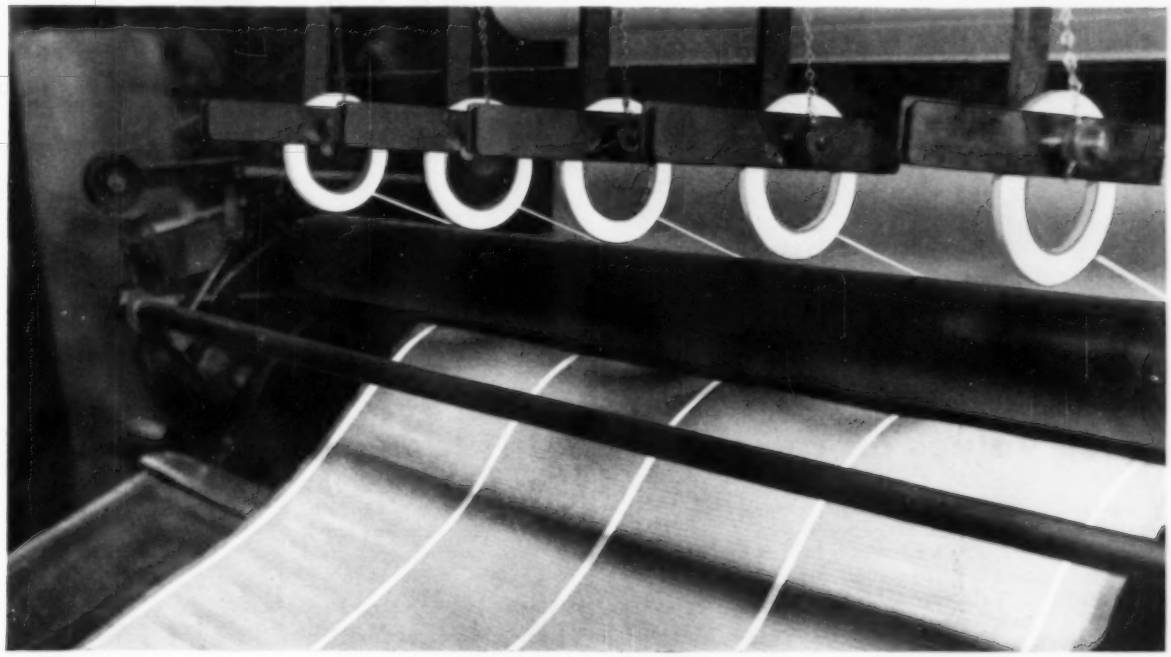
This "SCOTCH" Brand Tape helps put in the pleats!

Faster pleating at less cost with this "SCOTCH" Brand Pressure-Sensitive Tape! Paper backing and pressure-sensitive adhesive of tape hold the pleats during the entire curing cycle. And the tape strips off clean—leaves no adhesive residue.

This "SCOTCH" Brand tape is only one of the many "SCOTCH" Brand tapes designed for the textile and apparel industries. There are tapes that stick on both sides—for starting cloth on high-speed winder shells, tapes in colors—for identifying roving cans, tapes to do jobs you'd never dream tapes could do.

Together, these "SCOTCH" Brand tapes make up the world's most complete line of pressure-sensitive tapes for textile mill use. That's why you get the *right* tape for your need when you specify "SCOTCH" Brand.

You get the right tape-dispensing machine for your particular need from our sales engineers, too. Write 3M, Dept., PZ-28, St. Paul 6, Minn. for free manual.



When tape costs so little, why take less than

REG. U.S. PAT. OFF.
SCOTCH BRAND **Tapes for the textile and apparel industries**

MINNESOTA MINING AND MANUFACTURING COMPANY
...WHERE RESEARCH IS THE KEY TO TOMORROW

3M COMPANY

For more data, write this page number on Reader-Service card. →

For every process fluid, there's a better Crane valve

These valves on corrosive steam* lasting 4 times longer

What's par for valve life on tough, corrosive steam? Read how Gardner Board and Carton Company's Lockland Mill at Cincinnati raised it from one week to 12 . . . then with "Craneloy 20" valves, to more than a year's service.

The installation is on 150 psi. steam to a siphon tank of 66° Baumé sulphuric acid. The acid is mixed with steam to spray ink off screens in a wet end process.

On occasion the siphon line is left in the vat, causing condensation which forms a vacuum. This pulls acid back into the line and through the valve.

With brass valves in the line, the corrosion forced replacement every week. Another make special alloy valve was tried; it lasted 12 weeks. Better, but not good enough!

Then "Craneloy 20" globe valves were installed—more than a year ago. With more than 4 times longer service given, these highly engineered Crane alloy valves still hold tight and operate smoothly. A good valve to know to help you combat corrosion.

**This "Craneloy 20" valve is not ordinarily recommended for steam, but here the sulphuric acid mixture provides enough lubrication to retard galling.*

GET FULL FACTS . . . on "Craneloy 20" and other Crane quality alloy valves and fittings. Ask your Crane Representative for Circular AD-2080, or write to address below.

CRANE VALVES & FITTINGS

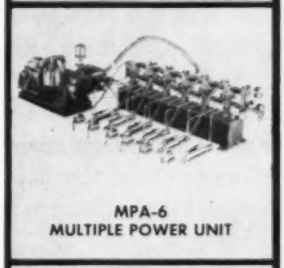
PIPE • PLUMBING • KITCHENS • HEATING • AIR CONDITIONING

Since 1855—Crane Co., General Offices: Chicago 5, Ill. Branches and Wholesalers Serving All Areas

DO YOU HAVE THESE CLOTH GUIDING PROBLEMS?

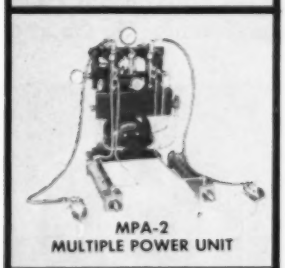
HLBG
POWER UNIT

FIFE
CAMBERING ROLLER ASSEMBLY

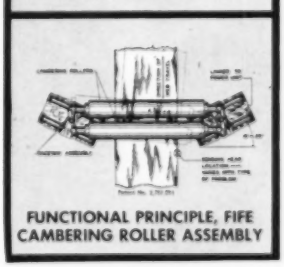


MPA-6
MULTIPLE POWER UNIT

KHWA
SHIFTABLE CRADLE



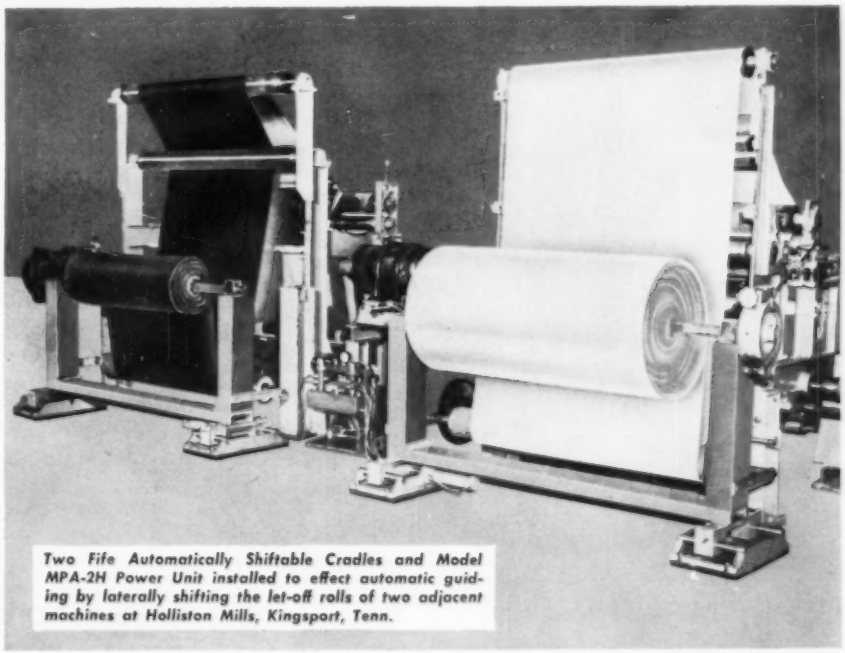
MPA-2
MULTIPLE POWER UNIT



FUNCTIONAL PRINCIPLE, FIFE
CAMBERING ROLLER ASSEMBLY

1. Would you like to have your cloth selvages engaged more evenly and accurately on your tenter pins or clips, automatically positioning your tenter rails with smooth, accurate hydraulic action?
2. Would it give your company a sales advantage to automatically have accurately wound rolls of goods to offer your customers?
3. Would your cloth room inspectors be able to do a more efficient job of inspection if they did not have to spend time manually shifting goods into alignment?
4. Would more accuracy in positioning your cloth goods into coating, combining, drying, laminating or any finishing plant operation help you reduce waste?
5. Would you like to guide into printing with sufficient accuracy to be able to print a legend on the selvage edge?
6. Would you be interested in having your materials guided into trimming or slitting with sufficient accuracy to eliminate all waste other than the selvage edge?

FIFE *HAS THE ANSWERS* to these as well as many other guiding problems encountered in the textile field. One or another combination of the various components which we manufacture can offer the solution to almost any automatic guiding problem.



Two Fife Automatically Shiftable Cradles and Model MPA-2H Power Unit installed to effect automatic guiding by laterally shifting the let-off rolls of two adjacent machines at Holliston Mills, Kingsport, Tenn.

For complete 27 page catalogue, write to:

• FIFE • MANUFACTURING Company
INCORPORATED
FORMERLY
AUTOMATIC WEB CONTROL MFG. COMPANY

P. O. Box 878 Oklahoma City, Oklahoma

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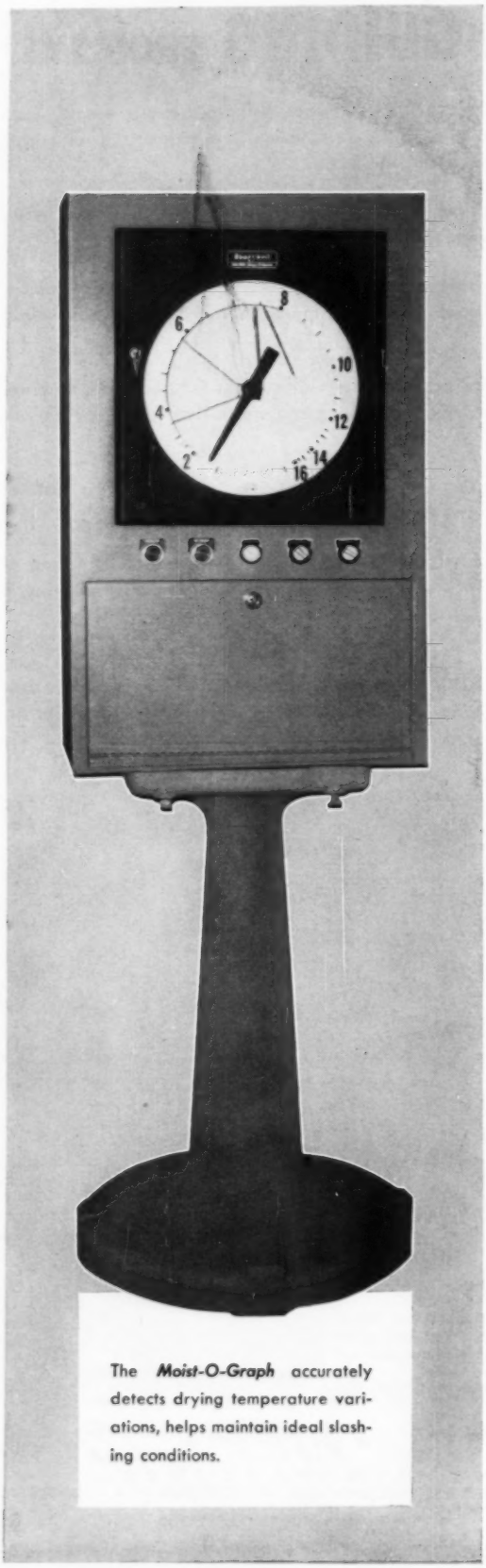


The ***Moist-O-Graph*** accurately detects drying temperature variations, helps maintain ideal slashing conditions.

HONEYWELL

MOIST-O-GRAPH

keeps beam moisture constant for . . . best weavability

The result of years of field experience, the Honeywell *Moist-O-Graph* gives close control of slashing. Set points are automatically held during creeps, stops or shutdowns. Calibration checks can be made quickly with a conveniently located switch. Dial settings adapt the system to many combinations of fibers, blends or sizings. The *Moist-O-Graph* requires little maintenance and minimum spare parts stock.

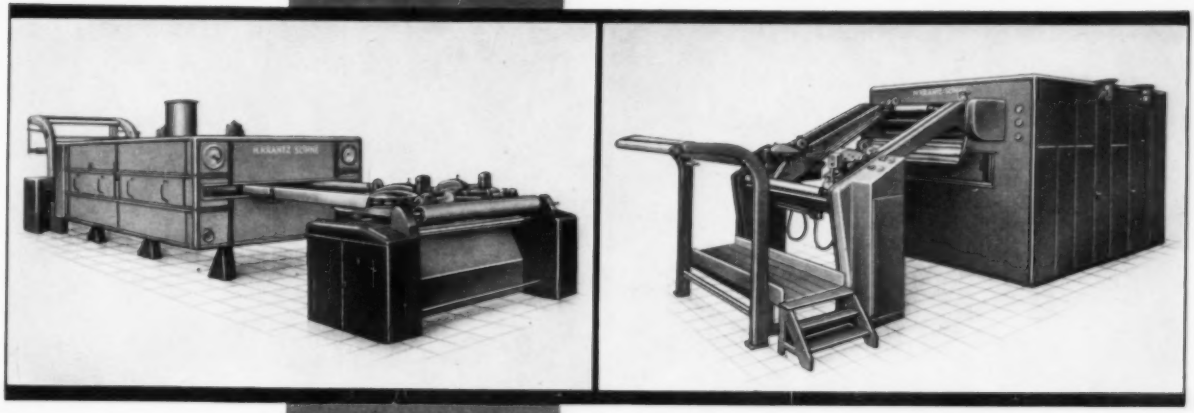
Your nearby Honeywell sales engineer can show you how the *Moist-O-Graph* can step up production and quality in your slasher room and increase efficiency in your weave room. Call him today . . . he's as near as your phone.

MINNEAPOLIS-HONEYWELL REGULATOR CO., *Industrial Division*, Wayne and Windrim Avenues, Philadelphia 44, Pa.—in Canada, Toronto 17, Ontario.

*For complete **Moist-O-Graph** technical data, write for Bulletin 9306, "Instrumentation for Slasher Room Processes."*

MINNEAPOLIS
Honeywell
BROWN INSTRUMENTS

First in Controls



Original KRANTZ Finishing machinery again available in the U.S.A.

KRANTZ HIGH SPEED SINGLE LAYER TENTER FRAMES
KRANTZ HIGH OUTPUT MULTI-TIER STENTERS WITH NOZZLE DRYING

These machines guarantee absolute reliability, high output at lowest cost, perfectly even drying over the whole width of the fabric, highly efficient air circulation without harming the fabric, efficient cooling of the cloth, direct access to the fabric, the chain rails and the filters.

These features have been recognized by many progressive mills and proven in numerous installations all over the world.

Catalogues, full description and specifications, quotations furnished without obligation.

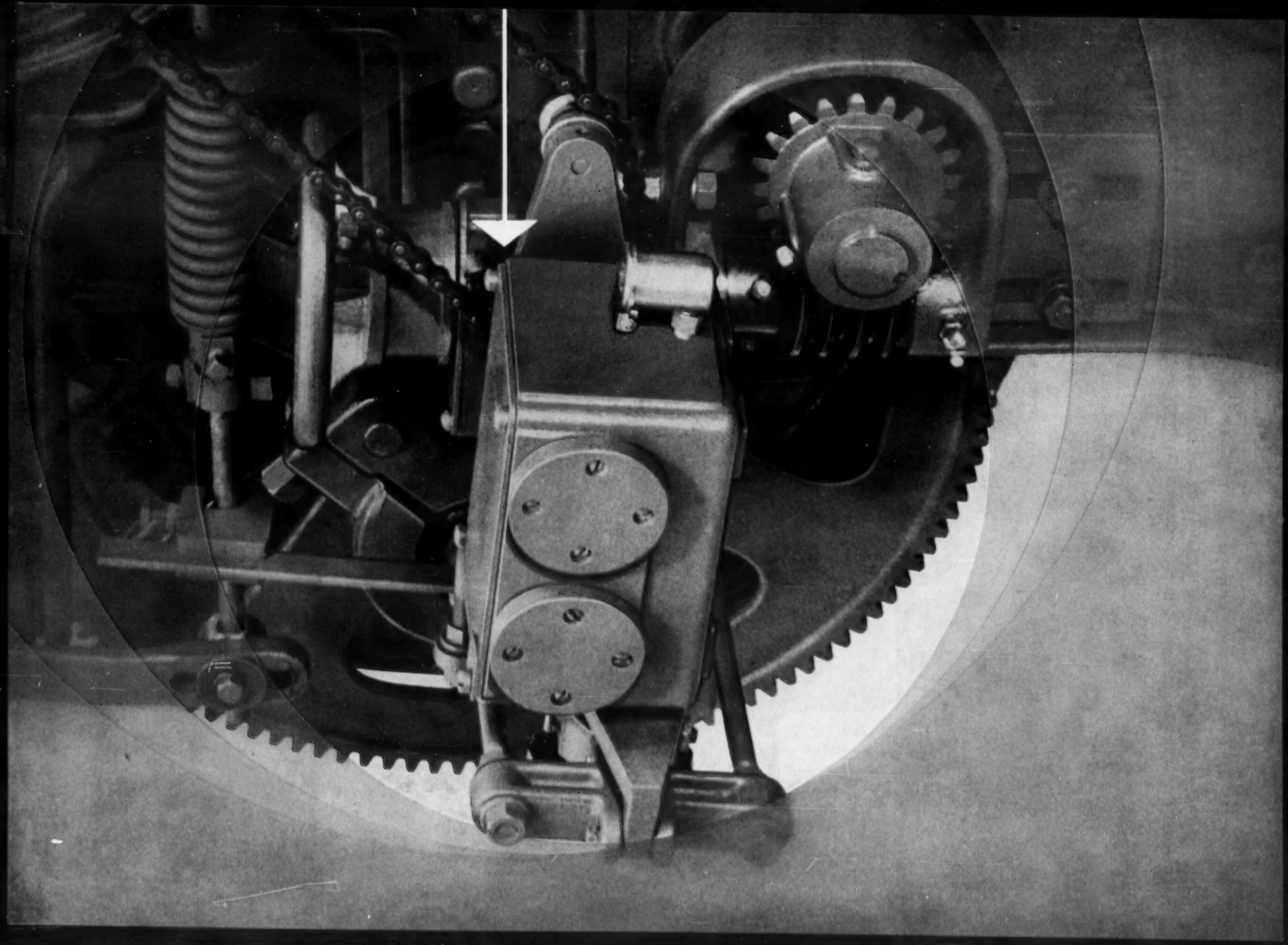
H. KRANTZ SOEHNE - AACHEN/WEST GERMANY
Multi-tier, single layer stenters — carbonizing plants, roller presses — press papering machines

H. KRANTZ - AACHEN/WEST GERMANY
Raw stock and yarn dyeing and bleaching machines — hydro-extractors

Represented in the U. S. A. by:
ERNEST L. FRANKL ASSOCIATES, 515 Madison Avenue, New York 22, N. Y.

A multi-tier tenter will be exhibited at the next Hanover fair April 27th—May 6th 1958

For more data, write this page number on Reader-Service card. →



DRAPER TRU-TENSION LET-OFF

. . . controls yarn tension *AUTOMATICALLY* from full to empty beam

The Draper Tru-Tension Let-off controls yarn tension by means of a *positive, continuous drive* and a compensating friction transmission.

The "Tru-Tension", a compact, precision built mechanism eliminates many cloth defects commonly attributed to the Let-off.

Simplified design provides for fast, easy application. The new "Tru-Tension" may be applied directly to looms having the conventional #4 Automatic Bartlett. Looms equipped with other Bartlett Let-offs require a new Worm Wheel Shaft Housing.

Little or no adjustment is required from full to empty beam *once the initial settings are established*. On critical weaves, substantial savings are possible.

The Tru-Tension Let-off is currently available for X-2, XD, and XP model looms. For additional information on this and other Draper products, *consult your Draper representative*.

DRAPER CORPORATION

HOPEDALE, MASS.

Atlanta, Ga. • Greensboro, N.C. • Spartanburg, S.C.

On the Reading "100" Automatic, yarn ends from main and welt carriers brought in from the right, and yarn ends from all carriers brought in at the beginning of splicing, are separated *automatically*. It's the Automatic Thread Separator feature of . . .

the machine that almost thinks for itself

The mill-proved Reading "100" is just about the nearest thing to a completely automatic machine as is possible in full-fashioned knitting. Every motion is automatic — and closely controlled — to assure continuous, uninterrupted production of superior-quality stockings at lower per dozen costs, and to make it possible for an operator to earn more money. Let us give you the mill-proved Reading "100" story.

Builders of:
The "Reading" CK-A
Circular Knitting Machine
The "Reading" Tricot Machine
The "Reading 100"
Full-Fashioned Knitting Machine
The "Reading" Full-Fashioned
Outerwear Machine
The "Reading" Braiding Machine
Textile Spring-Beard Needles
Arrow Latch Needles

The "READING 100"
Full-Fashioned Knitting Machine

Knitting Machine Division
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No Feast and Famine?

For as long as men now in the textile industry can remember, the greatest bugaboo of the industry has been the old "feast and famine" cycle. Twenty-five years ago—before wages and hours regulation and before the era of high taxes—it was a common saying in the industry that a mill could afford to break even for five years in order to enjoy six months of good business.

Perhaps the saying was only a figure of speech and that situation did not really hold true. Certainly it doesn't now. The tax structure alone makes it impossible.

However, the saying illustrates a habit of thought that is still plaguing the industry. There is no doubt at all that many, perhaps most, mill managements definitely count on the upswing of the old feast-and-famine cycle to help solve their profit problems.

It is easy to find mill men, economists, bankers, and others interested in the textile industry who point out that "it is time the upswing started." We have done it ourselves. And there is no doubt that according to "the cycle" the upturn from the 1956-57 valley is overdue.

The Cycle Is Off Schedule

But something unusual is happening; the cycle is not working according to schedule (p. 81). By the cycle, we should now be well on our way toward the peak of the "feast" swing. Although some improvement has occurred in certain areas of textile business, no one thinks that a great boom is beginning.

This state of affairs must be a grave disappointment to a mill that is trying only to wait out the calendar until the next easy-profit period comes.

No one can be certain, of course, that the textile cycle will not work again with as excessive ups and downs as it has in the past. It is almost certain that swings of some magnitude will continue to occur.

But good reasons can be found to think that the old feast-and-famine cycle is obsolete as a management point of view and a profit tool.

New Conditions, New Attitudes

Anyone with a pet theory can use it to demonstrate that almost any given thing either causes or is closely associated with economic ups and downs. Whatever the causes or associations of the textile feast-and-famine cycle, everyone knows that the way it works is simply that a period of overbuying and overproduction is followed by a corrective slump to clear out the excess goods.

Everyone knows too that the most violent ups and downs are associated with war and depression.

Most people are more or less of the opinion now that war as we have known it in this country is a thing of the past. Probably also a so-called "police action" of the magnitude of Korea is too risky now. If so, the cause of the sharpest textile swings is removed.

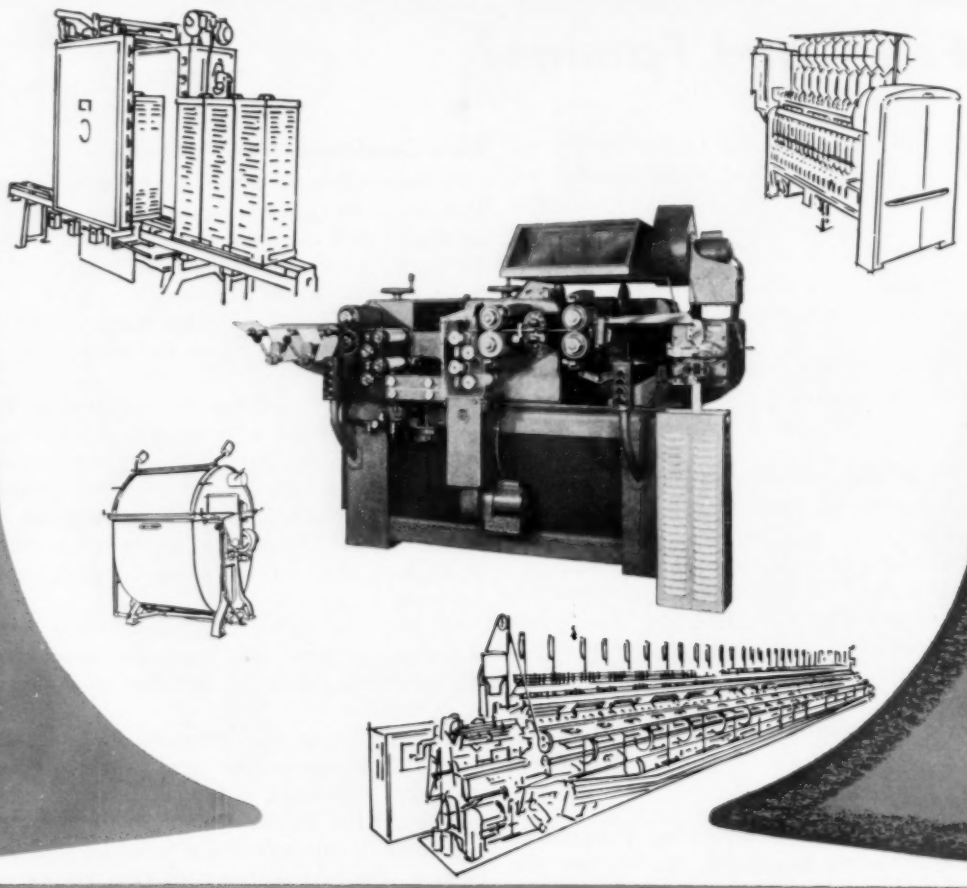
Without the threat of drastic shortage of textiles and violently fluctuating prices, the lesser cycle—the one commonly called the "two-year" cycle—loses most of its steam.

The proposition then becomes one only of level-headed mill management geared to a substantially steady textile demand, with profits a reflection of management, not of a cycle.

Admittedly this reasoning is based on what seem to be facts now. As is always the case, no one can say firmly that facts are really facts until they become recognized history. If the textile cycle is changing character, the important thing for anyone who has come to depend on it is to recognize and admit the change as soon as possible. Certainly management thinking will have to be revised to be in tune with the new realities such a change entails.

O. M. Thomas

Rx FOR PREMIU[illegible] SWEATE[illegible]



*When all ingredients — from tow to garment — are expertly selected and handled.

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Textile World

Volume 108, No. 2. February, 1958

1957-1958 Review and Forecast

1958 Business: Inventories vs. Production

The upturn in production, sales, and profits expected last year did not occur. It is now looked for in 1958.

The biggest drawback is inventories held by mills.

Key to a better year in 1958 very likely lies in continuing present production curtailment to hold inventories at present levels or reduce them.

ONE OF THE MOST SIGNIFICANT, AND SURPRISING, TEXTILE-BUSINESS DEVELOPMENTS OF 1957 was the failure of the famous "textile cycle" to perform according to past patterns.

At this time last year, most observers expected a sharp upturn in mill production, prices, and profits. According to the historic two-year cycle (usually about 18 months up and six months down), the upward swing should have begun in the third quarter of 1957.

But the cycle failed to work. Although in the fourth quarter some signs of slight improvement were noted, no real upward swing got under way; and at the start of 1958 most predictions are more or less the same as they were in early 1957: business will continue at about its present level for the first half of 1958 and turn strongly upward in the last half.

Is the Cycle Leveling?

Some observers think that perhaps the textile cycle is leveling. The drop from the last peak to the present trough was not as great as the last two or three previous drops, but it has lasted about twice as long. Unless some unusual demand develops, the next rise is not likely to skyrocket as badly as late rises did.

With considerable overcapacity liquidated in late years and no get-rich-quick spur in sight to cause excessive expansion, it is entirely possible that the textile industry has entered a more level and more stable period of operation.

Inventories a Danger

Mill inventories are high, but stocks at most steps between the mill and the consumer are at more favorable levels.

With the price of cotton going up, more goods probably will move from mill warehouses into customers' hands.

However, final consumption has remained and almost certainly will remain relatively constant.

The real danger, therefore, is that mills may step up production in the mistaken notion that another cyclical period of buying is under way. For at least the first part of 1958, maintenance of present production curtailment seems the key to business and profits for the year as a whole.

Mill Improvement Continues

Mill spending for equipment and supplies [TEXTILE WORLD, Jan., p. 11] dropped 2.7% in 1957 from 1956; but 1957 still remained the second highest year for expenditures.

Knitting mills turned in the best record. Purchases of knitting machinery and supplies was 3.1% higher than in 1956, but in all other classifications mills reduced their expenditures last year.

In 1958, mills, with the exception of knitting mills, are expected to spend at about the same rate as in 1957. Expenditures by knitting mills are expected to drop 8.3%. Expectations in other categories are: spinning and weaving, down 0.4%; finishing, about the same as in 1957; auxiliary equipment, up 3.0%; and supplies, up 3.9%.

Union Will Be Active

Southern textile mills are still a challenge for union organizers. In 1957, efforts to crack Burlington, labeled its "prime target" by TWUA, failed. This year, the union is concentrating on Gaston County, N. C., with Textiles, Inc., a prime target. Most observers expect little success for the union.

Mill Capacity

Declining mill production capacity, particularly as revealed by government figures of spindles and looms in place, has led to a great deal of study in late years on capacity vs. demand. The following comments by Joseph Englert, of the economics department of Chicopee Mills, indicates some of the difficulties faced in such a study:

"Forecasts have repeatedly been made indicating that undercapacity would develop in the textile industry in the late 1950's. With this situation assumed to be imminent, the industry continues to be plagued with overproduction. Mill activity declined 4.2% in 1956 and 7.2% in 1957. Prior forecasts have discounted certain important developments that minimize the possibility of undercapacity in the next 5 to 10 years.

"1. While population has increased at the rate of 1.5% per year and is likely to continue at about that rate, loom utilization is well below the rate of operation that mills prefer.

At the end of 1956, rates of operation were:

Cotton mills	90.5%
Man-made-fiber mills	85.2
Woolen and worsted mills	76.0
Weighted average	88.1%

[By the fall of 1957, the rate of operation had dropped to 82%. Textile mills prefer to operate at a rate of 92% or 93%.]

"2. With per-capita fiber consumption stable at about 35 lbs., population increases for the next eight years will be sufficient only to bring loom utilization up to full three-shift operation.

"3. While absolute numbers of looms and spindles have declined annually since 1925, modernization of existing equipment has been carried on continuously and filament-yarn fabrics, which do not involve the use of spindles, have substantially increased in importance.

"4. Nonwoven-fabric production, requiring neither spindles nor looms, is growing at a rate to double every three years.

Production in 1960 will approach 1-billion sq. yds., or approximately 9% of the present total square-yard textile production.

"5. Capital expenditures, low in recent years, will be increased rapidly when textile manufacturers feel that present equipment can be fully utilized and a fair return is likely on new equipment."

Mill Production

1957 — Down 7.2%
1958 — Slow Start, Sharp Pickup

Production cut-backs dropped 1957 mill output 7.2% below 1956 production. Cotton, rayon, wool, and silk dropped; acetate was up slightly; and other man-made fibers continued their forward surge.

Expectations for 1958 are that production will remain at about the present rate for the first half. A sharp pickup in the last half is expected to put 1958 2% to 3% above 1957.

Mill production in 1957 was 7.2% below the 1956 level. TEXTILE WORLD's mill-activity index fell to 98 from 106 in 1956 (1947-49 = 100). There were approximately 6,259-million lbs. of fiber consumed in the United States during 1957, compared with 6,486-million lbs. in 1956.

The percent gain or loss in fiber usage by type of fiber from 1956 to 1957 was:

Cotton	−6.1%
Rayon	−2.6%
Wool	−9.0%
Other man-made	+25.9%
Silk	−23.4%

How Things Stand Now

Inventories

Inventories held at all levels in the textile industry are estimated to be 10% higher than normal. Cotton-cloth inventories stood 11% higher than 1956 at the end of the third quarter. A slight decline was noted in September, and it was anticipated that fourth-quarter production cut-backs would prevent further accumulation and would result in a slight decrease from the August high.

Rayon-mill stocks are up 12% from 1956 levels. After substantial reductions in late 1956, stocks began to rise sharply in March, 1957, and reached a peak in June. On an historical basis, present stocks are excessive.

The inventory picture is mixed in distribution channels. Finishers' stocks of both gray and finished goods are extremely high. Stocks at apparel manufacturers' establishments are high, although sales are at predicted levels. At apparel retailing levels, inventories have been dropping since the fall of 1956, and the stock-to-sales ration has been cut to 2.7, the lowest level since 1952. At retail,

Total consumption (by years previous to 1942, monthly from 1942 on) of all fibers in millions of pounds; horizontal lines show yearly monthly averages.

stock-sales ratios of goods other than apparel are on a par with last year for most major textile items.

Mill Orders

Cotton-mill-order backlogs declined substantially in 1957 from the 1956 highs. This decline was caused by cancellation of old orders and to billings exceeding new orders. Another factor contributing to the decline was the high inventories, which provided buyers with readily available goods in the spot markets without the necessity of making firm commitments in a declining market.

Prices and Profits

Prices declined steadily on cotton fabrics from January through mid-November. A rise in raw-cotton prices in November raised prices slightly as manufacturers were caught in a price-cost squeeze. Textile-mill profits declined from $178-million in the second half of 1956 to $131-million in the first half of 1957—a decrease of 26% from already depressed margins.

Man-made-fiber prices increased slightly over 1956, but fabric prices remained at 1956 levels.

Outlook for 1958

Three factors that influenced the 1957 textile picture will carry into 1958:

Raw-Material Prices

After remaining stable for the first 10 months of 1957, raw-cotton prices advanced to the highest level since 1956 in mid-November. The price for Middling 1-in. cotton (14-market average) was precipitated by the November forecast of 11,288,000 bales of 500 lbs. gross weight, compared with October's forecast of 12,401,000 bales and last season's crop of 13,310,000 bales. The reduced-crop forecast resulted from extreme weather conditions in cotton-growing areas and from a decrease of 2.6-million acres planted as a result of the Soil Bank program.

In addition to the short crop anticipated, United States exports rose from 2.2-million bales in the 1956 season to 7.6-million bales during the 1957 season—the largest quantity exported since 1932. Government-controlled cotton was reduced in 1957 to 5.2-million bales from 9.9-million bales in 1956.

The positive results of the Government Export Sales Program were an improvement in the price position of American cotton in overseas markets, the increase in exports noted above, and the resulting decline in stocks held by CCC. The adverse effects are the resultant domestic cotton prices for 1957-1958, which are unrealistic in relation to prices of man-made fibers, and the subsidy paid to American exporters to compensate for the difference between the U. S. price of cotton and the export price.

Cotton-Products Export Program

The Cotton-Products Export Program administered by the CCC makes equalization payments on all exports of textile products containing 50% or more of cotton by weight. Instituted in 1956, the program was designed to return the U. S. industry to a competitive basis in the world market. This program was the result of the 30% decline of United States textile exports from 1951 to 1956.

The success of this program is doubtful, since total exports of cotton and man-made-fiber piece goods declined 4% in the first nine months of 1957 compared to 1956. The program has only compensated for the difference between domestic cotton prices and the price the Government receives for cotton in the world market. The high wage differential in the U. S. still leaves the textile industry at a competitive disadvantage, as evidenced by declining U. S. exports.

Imports and Domestic Stocks

The high level of Japanese imports in 1956 and early 1957, prior to the agreement with Japan on textile imports,

TEXTILE WORLD'S
Textile-Mill-Activity Index
(1947-1949 average = 100)

1924	50	1941	106
1925	58	1942	113
1926	61	1943	109
1927	68	1944	101
1928	61	1945	98
1929	66	1946	107
1930	50	1947	105
1931	53	1948	105
1932	48	1949	89
1933	60	1950	112
1934	52	1951	113
1935	57	1952	106
1936	70	1953	107
1937	72	1954	99
1938	59	1955	110
1939	74	1956	106
1940	80	1957 (est.)	98

contributed to high domestic stocks. Cotton-textile production reached a peak in 1956 following the 1955 peak in man-made-fiber production, and stocks carried into 1957. Consequently, September of 1957 was the twenty-second month registering a textile-output decline.

Thus, in early 1958 the most serious problem facing the industry is the digestion of excessive stocks.

Production by Fiber

Cotton

Output of cotton broad woven goods in the first six months of 1957 amounted to 4,956-million yds., a decline of 8% from the 5,382-million yds. produced in the first half of 1956.

From July to September an estimated 2,260-million yds. were produced. This output was 7% below second-quarter figures and represents approximately the normal seasonal decline. Compared to 1956, third-quarter 1957 production declined 4%. Considering the curtailment in production, fourth-quarter output should run slightly higher than the 2,280-million yds. produced in the third quarter.

Sheetings and Ducks

Production of sheetings and allied coarse- and medium-yarn fabrics during the first half of 1957 decreased 4%, compared with 1956. Duck output declined 14% after increasing in 1955 and 1956.

Print Cloth

Production of print-cloth yarn fabrics during the first half of 1957 was 1.94-billion linear yards, compared with 2.03-billion in 1956, a decline of 4%.

Inventories

Stocks of broad woven goods declined slightly in September after increasing consistently from January to August. In the period April to September, 1957, stocks increased 14% in total. September stocks were equivalent to 4.9 weeks of production and stood at 475.4-million yds., up 36% from their 1956 average.

New Orders

New orders decreased steadily through September, at which point they amounted to eight weeks' production.

The decline from the 1956 average computed at the end of September was 26%. This drop parallels the decrease in new orders and indicates old orders on the books are being completed without new-order replacements. This situation is desirable, since high unfilled-order backlogs can lead to overproduction if they are stagnant or if deliveries are repeatedly advanced.

Price of Cotton

As a result of the final 1957 crop forecast of 11,010,000 bales, raw-cotton prices increased to a recent high of 36¢ per lb. (Middling 1-in. cotton, 14-market average). First-quarter 1958 futures were at a level considerably higher than first-quarter 1957.

Cotton prices will probably continue to hold their present levels for the first four or five months of 1958.

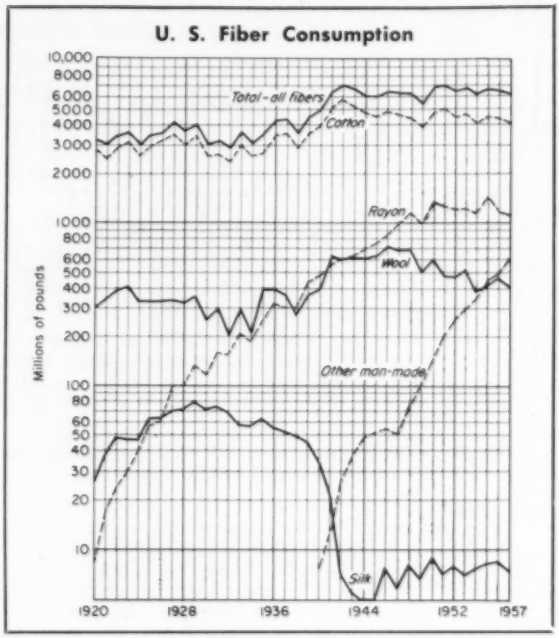
Price of Cloth

Cotton-cloth prices declined throughout the year to an October low. Print-cloth prices fell from 77.4¢ a lb. to 70¢ a lb. in October. The rising cotton price brought this basis to 72.9¢ a lb. in mid-November.

In 1958—

Stocks at mill and finishing-plant levels are extremely high. Forward commitments at the mill level may be made only because of rising raw-cotton prices and may result in further overstocking if mill-activity curtailment plans are not carried out.

Production of cotton cloth in the first half of 1958, if present sentiments prevail, will run 6% to 7% below 1957 levels. An upturn can be predicted for July or August of 1958 when stocks should be more in line with normal requirements. Indications are that over-all activity in 1958 should run 2% to 3% above the total 1957 level, with production in the second half of 1958 well above 1957 levels.



Man-Made Fibers

Rayon and Acetate

Consumption of rayon during 1957 amounted to 1,170-million lbs., 2.5% below the 1,201-million lbs. in 1956 and well below the 1,419-million lbs. consumed in 1955.

Rayon production was sharply curtailed in the second half of 1956, and stocks dropped appreciably from their high in July and August of 1956. Coming into 1957, stocks were 24% above 1955 levels but down 13% from record 1956 highs. As a result of overproduction in the first five months of 1957, stocks reached an historic high in June. A moderate monthly decline in the third and fourth quarters of 1957 should bring rayon stocks to a level approximately 11% above 1956 year-end figures. Prices in 1957 remained at virtually the same levels as in 1956.

Acetate held its ground against the trend of viscose and was slightly above 1956 levels as a percentage of rayon-and-acetate production.

Rayon Cloth

Rayon broad-woven-goods production decreased 17% in the first six months of 1957 from the same 1956 period—719-million yds., compared with 866-million yds. Second-half estimates place production about 12% above second-half 1956. Spun-rayon fabrics decreased 34% from 1956

levels, and filament-rayon fabrics decreased about 19%.

Rayon used in mixtures and blends declined 5% from 1956 levels, while drapery and upholstery usage increased 21%—from 52-million yds. in 1956 to 66-million yds. in 1957.

Nylon Cloth

Nylon output increased from 147-million yds. in the first half of 1956 to 163-million yds. in 1957, an increase of 10%. This output was below 1954 and 1955 levels but still 6.8 times the 1947-1949 output levels of 24-million yds.

Approximately 229-million yds. of other noncellulose-fiber fabrics were woven in the first half of 1957, an increase of 26.6% over the 168-million yds. woven in 1956. Polyester fabrics showed an 8% increase.

Tire Cord

Production of high-tenacity rayon, used primarily in tire cord and fabric, stood at 171-million lbs. in the first half of 1957. This output was down 6% from the 182-million lbs. produced in January-June 1956.

Nylon tire cord and fabric continued to grow in importance, with usage of 40-million lbs. in the first half of 1957. This usage was 43% above the 28-million lbs. used in the first half of 1956. Nylon usage in this area for the entire year of 1957 is estimated at 80-million lbs., up 31% from 1956.

Man-Made-Fiber Capacity

World capacity for production of man-made fibers continues to increase. In 1953, capacity was 4,487-million lbs. Capacity increased to 5,929-million lbs. in 1956 and is estimated at 7,621-million lbs. in 1957.

Anticipated capacity in 1958 is 8,676-million lbs., of which rayon and acetate will total 7,242-million lbs. and noncellulosic fibers 1,434-million lbs.

In keeping with the demand for noncellulosic fibers, planned capacity provides for these fibers to acount for 16% of the total, compared with 8.5% of the total in 1953.

Fiber Prices

The price of viscose staple declined in March to 29¢ per lb. from the 32¢ per lb. of 1956 and early 1957. The price increased in August, 1957, to 30¢ per lb. and again in September to 31¢ per lb. At the end of the year, the price was 31¢, 3% below average 1956 levels.

Acetate-staple price increased in July, 1957, to 33¢ per lb. from the 1956 and early 1957 level of 32¢ per lb. August brought a further increase to 34¢ per lb., which was maintained and which put the year-end price 6% above the 1956 level.

Rayon and Acetate Stocks

Stocks of raw rayon and acetate material increased from 104.6-million lbs. in January to 122.2-million lbs. at the end of November, a 12% gain over 1956. This increase came on top of a 24% increase for 1956 over 1955.

In 1958—

Output of man-made fibers in 1958 should rise 4% to 5% over 1957 levels. In view of possible rising cotton-textile prices, prices of man-made-fiber textiles should remain firm. Stocks are at a high level, but future accumulation has stopped; and the second quarter should see increased activity continuing through 1958.

Wool

Production of woven woolen goods for 1957 is estimated at 294-million yds., 10% below the 327-million yds. produced in 1956. This output compares with 310-million yds. in 1955 and 279-million yds. in 1954. The production

Per-Capita Fiber Consumption

	1956	1957	% Change
Cotton	22.6	21.1	−6½%
Man-made fibers	9.1	9.4	+3%
Wool	3.0	2.9	−3%
Total	34.7	33.4	−4%

decline follows the general output curtailment and does not necessarily indicate a continuing declining trend in wool consumption.

Woolen and worsted mills used 205-million lbs. of apparel wool (scoured basis) during the first nine months of 1957, a 13% decrease from usage in 1956.

Clothing

Production of men's and boys' woolen clothing in yards during the first six months of 1957 dropped 13% from 1956 levels but was 31% above 1954 production.

Wool fabrics for women's and children's wear declined 5% from 1956 figures but regained their lead over wool fabrics for men's and boys' wear. Considering over-all output reduction, the rate of decline for 1957 enhances the position of wool in women's and children's wear.

Nonapparel Wool

Nonapparel-wool usage declined 7% in the first nine months of 1957. Usage was 101-million lbs., compared to 109-million lbs. in 1956.

Government Orders

Government orders for wool fabrics increased 40% in the first half of 1957 over the like period of 1956. Orders for 1957 were 2-million yds. in the first six months, compared to 1.2-million yds. in the same period of 1956.

Carpeting

The production of woven wool and wool-blend carpeting in the first half of 1957 was 31.2-million sq. yds. This output was above that of the second half of 1956 but was 5½% below production in the first half of 1956.

Output of woven wool and wool-blend carpetings for all of 1957 was estimated at 60-million sq. yds., a decline of 5% from the 63-million-yd. output of 1956. As a percentage of total woven carpeting produced, wool carpeting increased from 17% in 1956 to 20% in 1957.

An encouraging sign for wool producers is the growth of wool usage in tufted carpeting. In the first half of 1957, usage was 7-million lbs. of yarn against 6.8-million lbs. of yarn for the whole year of 1956. If a projection is made on the basis of the usual second-half upturn of tufted manufacturing, usage of wool yarn for carpet tufting should have reached 15.2-million lbs. in 1957.

Wool Prices

Scoured-raw-wool prices in 1957 averaged 7% to 18% above those of 1956 but were slightly below the high reached in 1954. As in 1956, October and November saw a small decline in wool prices, which can be attributed to a seasonal lull.

In 1958—

With stocks at a moderate level, prices can be expected to remain stable. The high cost of wool compared to the cost of man-made fibers should bring a continuing increase in wool-blended fabrics.

Indications are that wool consumption over the next four to five years will remain stable as high-bulk synthetics are blended on a greater scale.

Management and Production

Urgent Aim for 1958 — Cut Production Costs

The "same old problems" in textile-mill management and operations are never quite the same. Early last year, many mill men looked hopefully to curtailment to solve the dwindling-profits problem.

It didn't solve it.

Now, in early 1958, most alert mills recognize that much more has to be done to reduce the cost of manufacturing, finishing, and selling.

It is not enough now just to save a pound of waste here, to get another pound of production per hour there, to save a replacement part some place. Much more fundamental improvement has to be made.

In this section the editors of TEXTILE WORLD summarize what they learned from calls on hundreds of mills and talks with hundreds of mill men and answer the questions—

- What was the significance of 1957 in textile manufacturing?
- What production and management roads will the industry follow in 1958?

Opening and Picking

Better Blending, Heavier Laps Improve Opening and Picking

Opening and picking departments are being steadily modernized and in some instances consolidated. The trend is toward—

- Harmonic blending
- Shorter opening lines
- Heavier laps
- More instrumentation

Scientific blending of cotton by Micronaire numbers is on the increase. And to facilitate blending, more mills are storing cotton in the warehouse by Micronaire number and tagging each bale with varicolored tags that indicate staple length, grade, mark, and bale weight as well as Micronaire numbers.

In one mill, the mix is predetermined in the superintendent's office before the cotton is laid down. A written order, specifying exactly how many bales with various characteristics are to be used, is sent to the opening room.

Next, the cotton bales are placed in designated areas on the opening-room floor marked to correspond with the characteristics of the cotton. A written report showing that the mix is exactly as specified is made to the superintendent.

The final step is to follow the stock through each process and plot curves showing good and bad running periods. The curves are analyzed, and it

is possible to predetermine with considerable accuracy just how any mix is likely to run in the mill.

Harmonic Blending Is Increasing

One of the largest mills in the industry lays down bales with similar Micronaire readings in groups and feeds specified percentages of cotton from each group to obtain a harmonic average that has been precalculated and plotted in curve form. This type of blending is on the increase.

A number of mills last year installed mechanical blenders that automatically weigh predetermined amounts of cotton from each feeder and convey it to the opening line. More of this kind of equipment will be used in 1958.

Additional emphasis is likely to be placed on blending in coming months because of the poor quality of the 1957 crop.

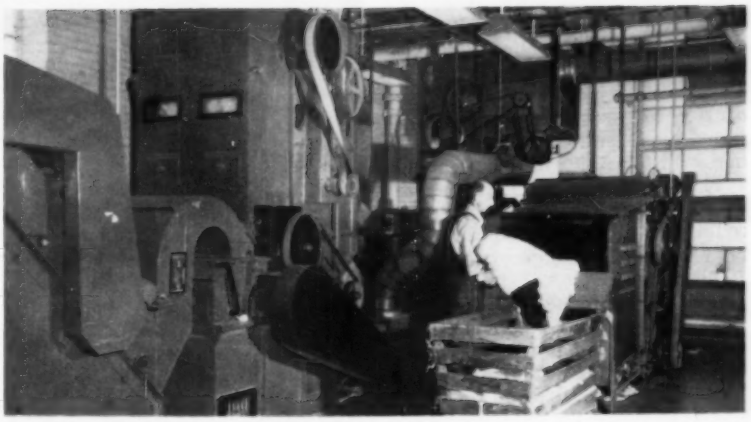
Shorter Lines Reduce Beating

The trend in opening-room equipment is toward shorter cleaning lines and less beating of cotton. Improved cleaners and better ginning methods have contributed to this trend.

Little new cotton opening and picking equipment was offered in 1957 by machinery manufacturers. An opener-cleaner, however, was developed for manufacture under license by the Southern Regional Research Laboratory.

This machine has the cleaning and blending ability of the earlier SRRL cleaner. Other advantages are that it requires less air and cleans at the rate of 1,500 lbs. per hr. Normally, the cleaner is recommended as a substitute for the Buckley and porcupine sections in the average cleaning line.

The SRRL organization also announced an experimental carding cleaner made by replacing the finisher section of a picker with a toothed cylinder and an antipluck feed roll. License for the manufacture of this machine was not offered in 1957.



SHORTER CLEANING LINES, better blending, and heavier laps are increasing opening and picking efficiency.

The most important trend in picking is in the direction of heavier laps. Many mills installed high-compression calender rolls that permit the production of laps weighing up to 85 lbs.

Some mills increased the weight of their laps to 70 or 80 lbs., but the majority still hold the weights to 60 lbs. or less.

Lap Lay-ins Are Reduced

One mill reports that by increasing lap weight from 56 to 70 lbs., the number of lay-ins per card tender was reduced but no changes could be made in the card tender's basic job.

Another mill increased lap weight 18% and card tenders' work assignments 33%. In this instance, 18x42 coiler heads on the cards played a big part in the increased work assignment.

Several mills report that increased lap weights permitted the elimination of one or two card tenders and that lap evenness is better.

Lap scales are becoming more automated. One new balance automatically checks lap weights and lifts the laps to an overhead conveyor. Another scale, made in Japan, plots the weight of picker laps and corrects the picker when nonstandard laps are produced.

Many mills are finding that scales that print lap weights cut reject laps greatly by eliminating human error and carelessness. Another advantage is improved evenness at carding.

More control instruments, lap testers, and moisture meters were put in use in 1957; and the trend is likely to continue.

In some mills, especially smaller plants, opening and picking departments are being consolidated to reduce the cost of labor and handling. In many instances, one man runs all opening and picking equipment, whereas formerly two or more were required.

Carding

Research Aims at Higher Production

Results of carding research reported in 1957 could help mills improve their operations in 1958 if they apply some of the principles discovered. On the mechanical side, 1958 will see the installation of more—

- **Large coilers and cans**
- **High-speed drawing and combing**
- **Large-package roving frames**

One of the outstanding developments in carding during 1957 was not in the machinery itself but rather in reports of research directed toward higher production and fewer neps at the card.

A 16-mill cooperative study directed by the Research Dept., School of Textiles, North Carolina State College, showed that average card production can be increased 60% without damage to the stock by using integrated speeds and settings in conjunction with the Abington roller doffer.

The report says that it is practical to card up to 25 lbs. per hr. under mill conditions and that good sliver has been produced experimentally up to 100 lbs. per hr.

Other carding research was carried out at Bibb Mfg. Co. to determine the effect of high doffer speeds on neps in the web. A reduction in nep-like imperfections of 35 to 50% was realized experimentally by increasing the doffer speed from 9.1 to 21.5 rpm. at a production rate of 11 lbs. per hr.

Further experiments at Bibb showed that it is possible to reduce neps 15 to 20% by increasing the lickerin speed from 421 to 769 rpm. The simultaneous effect of both factors was not studied.

Flat Speed Is Studied

In Hungary, the Technical University at Budapest studied the effect of flat speed on (1) linear relation to the weight of card strips, (2) loading of the flats, (3) neps in the web, (4) mean length of the fiber, and (5) trash in the strips and web. These studies confirmed some of the N. C. State findings.

Except for those mills participating in the North Carolina tests, relatively few American mills took the trouble to find out for themselves if they could improve or speed up their carding by applying principles brought out by the 1957 research reports. Those mills that did take advantage of the research report good results, however.

Despite the obvious advantages of faster carding, the trend in many plants is toward lower production. Some mills added more cards so that speeds could be reduced.

A number of plants did install roller doffers; but apparently the purpose was to improve the web, not to increase production.

Larger Coilers Are Used

One reason for the lack of interest in higher speeds probably is the rapidly increasing use of large (14- to 18-in.) coiler heads and cans. Little new equipment of this type was introduced last year, but numerous plants installed equipment already on the market.

There is no doubt that larger coilers and cans are a real cost-cutting development. In one mill, the use of larger coilers and 18x42 cans cut the card-room labor force 33% and increased doffing time from 40 mins. to 2 hrs.

LARGE CANS and high-speed drawing and combing are increasing production and cutting costs in more and more mills.

Another mill, changing from 12x36 to 16x42 cans, increased work assignment for card tenders from 37 to 57 cards and cut costs 20%.

Other mills report that the large cans reduce waste at drawing and have other advantages. The only disadvantage is in handling the heavy cans, but this problem is being solved rapidly by development of special trucks and dollies.

Cards May Have Suction Cleaners

An interesting and potentially important mechanical development, announced in 1957, is a suction-cleaning system for the card. Developed by Shirley Institute, the attachment consists of a hood and ducts that remove dust and fly from parts of the cards where air currents stir them up excessively. At least one full-scale production installation has been made in England and more are expected.

Interest in metallic card clothing was spurred by a detailed report from Joanna Mills Co. that covered installation problems, cost, advantages, and disadvantages of the wire. Several mills put metallic clothing on cards for testing last year, and the number is expected to increase this year.

Quite a number of mills replaced overhead card drives with individual drives to give smoother operation and reduce danger to operators from belts and pulleys. This trend, which is not new, will undoubtedly continue into 1958 and beyond.

Higher speeds in drawing and combing are a definite trend. Large numbers of new drawing frames and change-overs that run up to 300 ft. per min. were installed during 1957, and more will go into operation this year.

Combed-yarn mills are installing new combers in an effort to increase production and cut costs. Old combers are being speeded up wherever possible.

The newest comber on the market, introduced in 1957, runs 150 nips per minute and has a maximum production of 50 lbs. per hr. at 100% efficiency. This speed is double that of many combers now in use.

Roving Packages Grow Larger

In roving, the trend is toward still larger packages. Some mills, which only recently installed 12x6 frames, are replacing them with 12x7 frames.

According to machinery manufacturers, a 12x7 package is about as big as present frames can handle and speeds are as high as they can go without spreading the flyer legs.

To increase package size or speed any further, frames will have to be redesigned and generally beefed up. This operation cannot be done overnight; so chances are that roving frames will not get much bigger or faster right away.

Stop motions on roving frames are becoming almost standard equipment. Mills report that stop motions as a rule do not permit increased work assignments but do reduce waste substantially.

A few mills completely revamped card rooms last year, but most of the modernization money was spent in

CONTINUED ON PAGE 190

Spinning Mills Capitalize on Modern Machines and Methods

Although few changes were made in spinning machinery last year, mills went all out for cost-cutting equipment and methods. Interest in 1958 is focused on—

- Direct-spinning machinery
- Cycle spinning and doffing
- Improved drafting systems
- Mechanical cleaners

One of the most important developments in spinning during 1957 was the increased interest in direct (sliver-to-yarn) spinning.

Many mills for the first time began to look into the process seriously because direct spinning may represent the greatest cost-cutting potential since the perfection of one-process roving.

Numerous tests and a few production installations were made in American mills during the year. Most of the equipment installed was American-made and designed to produce coarse yarns. One mill, however, successfully operated a Japanese frame on combed knitting yarns throughout the year.

Principle Is Not New

The principle of direct spinning is not new, and many thousands of spindles are in operation in textile countries outside the United States.

In the past, American manufacturers have been hesitant to adopt the process because of the high initial cost of installation, extra floor space required, and other drawbacks.

Some mills are still skeptical, but there is no doubt that direct spinning has its foot in the American door and that its acceptance will increase as the machinery is improved.

Methods Are Improved

Modernization of methods as well as machinery is taking place in most spinning rooms today.

Cycle spinning is beginning to catch on in mills running large quantities of yarn of the same or approximately the same number. This system requires the spinner to patrol her complete job at regular intervals. One mill has installed clocks at strategic points to help the spinner stay on schedule.

Doffer Assignments Are Equalized

More mills are setting up systems to equalize doffer work assignments. One mill, for example, uses a control board that shows the location and number of each frame and the yarn number that is being spun.

The block of frames assigned to each doffer and the yarn number for each frame are marked with a grease pencil on a transparent overlay tacked over the floor plan.

When a yarn number is changed, the doffer's machine assignment is changed accordingly; and the change is marked on the board. Machine assignment and pay are calculated immediately.

When yarn numbers are changed, every effort is made to put the new numbers on frames in an area with similar numbers so that work assignments remain equalized at all times.

Another means of increasing manhour efficiency is the use of doffing teams that work on schedule. Some mills use a card system to predetermine exactly how many spindles each team will doff in a given length of time. Team doffing is increasing in popularity.

More interest is being shown in preventive maintenance. A number of mills have developed checklists for their section men and fixers to sign and turn in to the overseer, who spot-checks the work after it is reported complete. Closer check on maintenance men is becoming a necessity because of the ever-increasing cost of machinery and supplies.

The widespread trend toward vacuum-collection systems, frame cleaners, umbrella creels, and improved drafting systems is paying off in increased production per manhour and better-quality yarn.

The use of modern cleaning equipment alone has cut cleaning time 50% in many mills. In many instances, mills are relieving spinners of nearly all cleaning duties and increasing their work assignments 30 to 40%.

Special roll pickers usually are necessary when work assignments are increased this much. Roll picking may soon be reduced, however, by the development of synthetic-rubber clearer covers that do not have to be cleaned as frequently as regular covers.

The installation of vacuum-collection cleaners and umbrella creels continued strong in 1957; but markets are becoming saturated and equipment manufacturers are looking around for ways to improve or supplement present equipment.

The trend now is toward cleaning systems that return waste directly to the picker instead of depositing it in individual collection boxes.

Some underframe cleaners were installed, but improved frame and floor cleaners with multiple nozzles are reducing the need for this type of cleaner in most mills.

Machine Modernization Continues

On the mechanical side, last year was not very productive in terms of new technical developments in spining. But it was a fair year for the installation of machinery and attachments. Much of the equipment installed was introduced at the Greenville Show in 1956.

Many modernization programs started in 1957 are still under way. And new ones are in the making even though market conditions are not too good in some branches of the industry.

A good many mills installed new large-package high-draft spinning frames; but more plants changed over old frames by replacing drafting systems, spindles, and creels and adding mechanical cleaners.

The trend in drafting continues to be toward the high-draft systems that draft up to 35 or 40. Several new systems featuring spring weighting and easy cleaning were put on the market last year and are being put into use this year.

Most of the spindles installed were ball-bearing types. Some were foreign importations, but the great majority were made in America.

Some mills, in cooperation with machine builders, are testing rings and travelers at better than 11,000-rpm. spindle speed.

Air Cleaning Is Mandatory

Refrigerated and electrostatically cleaned air now is almost a necessity for mills located in or near metropolitan areas where smoke is in the air in winter and air-conditioned jobs are available in summer.

Some mills that do not want to or cannot afford to install refrigerated air conditioning are putting in air-changing systems or heat-removal equipment. Materials-recovery systems are being used in certain instances to lower the temperature in spinning rooms by exhausting hot air outside the building.

Mills that completely modernized spinning rooms in 1957 profited substantially. For example, Alma Mills reduced its spinning-room labor force from 133 to 66.5 and cut costs 31%. Falls Mfg. Co. installed new large-package frames that save $60,000 a year. Carolina Mills improved both carding and spinning and doubled its production of Canton flannel. Craftspun Yarns, Inc., consolidated and modernized two mills and cut the cost of yarn production 6¢ per lb.

These examples are only a few of the many mills that improved their position in 1957. Many more companies will be forced to climb on the modernization band wagon in 1958 if they expect to stay in business.

Winding, Spooling, Warping, and Twisting

Better Yarn Preparation Comes From New Handling

Mills teamed with consultants and machine manufacturers in developing better ways to handle yarn in 1957. Consultants showed the way to reduce ends down. Machine manufacturers cut out several steps in handling filling. Mills added new winders for—

- **Higher spindle speeds**
- **Rewinding for better fabrics**

In 1957, mills bought filling-winding machines announced in 1956. They bought these machines heavily for two reasons: (1) to switch to rewound filling for better fabrics and (2) to replace older, slower winders with new machines with spindle speeds up to 12,000 rpm. for higher production.

These conventional high-speed filling winders were bought by mills weaving both cotton and man-made fibers.

Half-a-dozen mills bought loom winders. Since test installations of these units are now scattered throughout all mill-manufacturing areas, conclusions should be reached soon on large production installations.

Mill Methods Are Improved

Mills improved their methods with existing equipment by close control of production departments made possible by checks from standards or engineering departments. Retied ends in some mills dropped to an extremely low percentage.

This trend to better methods was the result of development by individual mills and by technical consultants through several years. Weekly stop checks by mill laboratory and standards departments show the effectiveness of the methods. Better sales yarn and better fabrics are the results.

New Filling Handling Cuts Cost

There was a lot of activity by mills in cutting labor cost in handling filling between winding and weaving. Versatile pinboards and boxes of stacked bobbins are reducing the cost substantially. Several mills bought a new filling-box rack for looms.

Three mills tested an automatic filling magazine that delivers filling from winder boxes into the shuttle of a single-shuttle loom without handling. This magazine is slated for sale in 1958.

Three attachments to improve present filling winders announced during 1957 were (1) an automatic lint cleaner, (2) a bobbin-polishing machine that cleans and polishes 30,000 bobbins per day direct from bobbin-stripping machines with no extra labor cost, and (3) a yarn-oiling system.

Mills got a first look at two warp-winding machines announced during 1957. One winder is for cones or tubes for tire cords or coarse cotton, wool, or man-made-fiber yarns in packages up to 35 lbs. and in diameters up to 16 ins.

The other machine is a knitting-cone winder with a slub catcher, automatic bobbin sorter for full and partially filled bobbins, and a ribbon breaker.

Few mechanical changes have been made in spoolers in recent years, but mills are learning how to run them better. Here are a few examples of how mills are saving money at the spooler.

One mill cut ends down from 20 to

10 per round by tightening up its maintenance practices. The better-running machine made it possible to increase operators' work assignment to 20 pockets per minute.

Another mill increased production and improved quality by setting up a system of daily, weekly, and quarterly checks on every part of the spooler. In addition, two pockets per machine are completely torn down and overhauled each shift. Written reports are made in the form of a checklist by the fixer, and the work is spot-checked by both the second hand and the overseer.

Other mills are setting up rigid laboratory-investigation procedures on the causes of ends down, such as sloughing, gout, spinner's piece-up, foreign matter, weak yarn, wild yarn, tangles, break after tying, etc. Checks of this sort keep operators on their toes and increase manhour efficiency.

Probably few mill men realize that it is possible to wind yarn into cheeses on dye sleeves. One mill experimented until it found a way to make cheeses that can be dyed without back-winding.

This improvement cut the cost of its knitted socks 2%. Although of no immediate practical use, the mill also learned that it could wind cheeses weighing up to 4.6 lbs. on stainless-steel sleeves and dye them successfully.

Unless machinery manufacturers come up with vastly improved spoolers in 1958, the only way mills can cut spooling costs is to tighten up operating and maintenance practices to give more production per manhour.

Mills making short-run warps showed a great interest in two European sectional warpers in 1957, and two mills bought the warpers. These machines reduce warping cost substantially on short-run warps up to 3,000 yds.; above 3,000 yds., they aren't practical.

One warper has automated controls. A preset control panel governs yarn tension, speed for different yarn numbers, and the exact number of yards for each section of yarn. In addition, the beamed warp is taken directly to the slasher, if slashing is necessary.

Mills manufacturing fine-yarn fabrics from man-made fibers are looking at versatile equipment for warpers announced during the year. One piece of equipment is a multiple-beam tricot warper with 14- to 50-in. beam-width capacity. Two 14- or 21-in. beams can be run simultaneously. Beams are doffed with push buttons.

A warping creel for fine-rayon and other man-made-fiber yarns also became available during the year. It has an interchangeable bobbin frame for dyed yarn and vacuum braking for tensioning ends.

A truck to handle warper section beams without lifting offers safe and easy beam moving. Beams are rolled onto the truck on outriggers that are lowered to form a ramp. Then the outriggers are raised to hold the beam on the truck for safe transportation.

Mills twisting a large variety of fibers bought new twisters developed in 1957. Two doubler twisters were announced. One is for laboratory use, and the other is a mill-production model.

The production twister handles all sizes and types of yarn from the finest silk, nylon, and glass to the heaviest spun natural or man-made-fiber yarns. Novelty yarns are also twisted. The manufacturer provides a test room at its plant so that mill men can experiment and test their own yarns on the twister.

The 22-spindle laboratory doubler twister produces a 5-lb. package and has the same features as the production twister.

One mill that weaves tapes for zippers added a combination twister-winder during 1957 for more-accurate control of its finished zippers. Cords up to 6,736 yds. long are twisted and wound in one operation without knots. At standard twist of 3½ tpi., the twister-winder speed is approximately 85.8 yds. per min.

Auxiliary Parts Improve Twisting

A set of conversion parts to change the taper of knitting-yarn cones was produced during the year for ring twisters. The cone taper is adjustable, and the spindles stop ready for cone doffing.

Two new bobbins were marketed during the year: (1) an aluminum take-up bobbin in a single unit without joints for 2-lb. packages and (2) an aluminum twister bobbin with a grip knob that includes a special recessed ring for color identification.

Slashing

Improved Drives and Controls Aid Slasher Speed-up

The trend in slashing is toward more-automatic control and higher speeds. Many mills find that the number of slashers can be cut in half without decreasing the quality or quantity of warps sized by—

- **Improved size preparation**
- **Better size application and drying**
- **More-efficient drives and controls**

As in weaving, there were few new slashing developments during 1957. But in contrast with weaving, the sales and installation of slashers and accessories was brisk throughout the year.

The trend toward fewer, faster, and more-efficient slashers continued. Slasher speeds above 100 yds. per min. are not uncommon. Some mills have cut the number of slashers in half and actually produce more sized warps with the speedier equipment.

The speed-up of slashers has called for further instrumentation and automation in their operation. There were few new instruments and controls introduced in 1957, but many mills continued their programs of making size preparation and application as nearly automatic as possible.

Purifier Removes Condensate

Viscometer recorders that make permanent records of size viscosity and actuate control switches, alarms, and signals have been introduced. Another aid to better size preparation is a purifier that removes all condensate and moisture from steam lines that lead to slasher boxes and kettles.

The multicylinder slasher seems to be gaining in popularity. Of the units installed during the year, many were of the 9- and 11-cylinder type. However, there were also many of the three- and four-cylinder type, as well as the drying-chamber type of slashers, bought or rebuilt by a number of mills.

Instead of buying complete new slashers, many mills had rebuilding programs during the year. New high-speed fronts have been added to existing drying systems, and in many cases new size boxes and creels were also installed. These renovations have increased the output of some slashers as much as 100% at only a fraction of the cost of completely new installations.

Drives Are Easily Installed

New versatile drives that can be installed and maintained easily help obtain maximum slasher speed and efficiency. A hydraulic drive in package form that fits under the slasher and can be installed in an 8-hr. shift was introduced during the year.

Another aid to more slasher output is the presser roll. Although introduced earlier, many of these rolls were installed in 1957. The rolls help wind the yarn more evenly and make it possible to put 10 to 15% more yarn on the loom beam with correspondingly less downtime for beam doffing. One new air-operated presser roll adaptable to both old and new slashers was introduced during the year.

Although metallic yarns were not used as extensively in woven fabrics during the year as earlier predictions had indicated, the problem of running metallics with spun yarns on loom beams was largely solved by the addition of special creels on the slashers.

While many mills rebuilt existing slashers in 1957, indications are that most of them consider their rebuilt machinery as a temporary arrangement. When business improves, much of this machinery will be replaced.

Weaving

Looms Were Modernized By Many Mills In 1957

Although very few new or improved looms and loom parts were introduced in 1957, a number of weaving developments were on mill trial. Many mills continued the modernization of their weave rooms by—

- **Completely overhauling older looms**
- **Installing new drives**
- **Using improved loom parts**

Although 1957 was a rather dull year for both the weaver and the supplier, a definite trend seems to be developing. Since imports, competition from other materials, and close intra-industry competition has made some of the standard fabrics unprofitable, mills are going more and more into the production of special fabrics.

But the mills don't want to be caught out on a limb; so they are making their looms as versatile as possible. By being able to make a quick switch to any one of a wide range of fibers or fabrics, mills hope to remain in a competitive position.

For most of the machinery manufacturers it was an off-year for the introduction of new looms and accessories, and mills were reluctant to buy new weaving equipment.

Loom Sales Were Slow

While 1957 was a good year for the sale of some types of textile machinery, there were three apparent reasons for the lagging loom sales.

First, many mills have expended huge sums for new looms in the past 10 years and are now revamping their yarn-preparation departments.

Second, the somewhat curtailed condition of the textile industry as a whole has put a damper on the desire for more new looms. Unlike many textile machines, it is not practical to buy looms singly or in small lots. To modernize even a small weave room involves the expenditure of a lot of time and money.

Third, the announcements and rumors of the possibilities of the various shuttleless looms, circular looms, and weaving machines had some effect on the development and sales of conventional looms. Although these new weaving experiments do not seem to pose an immediate threat to conventional machines and methods, many mills adopted a wait-and-see attitude.

Some Loom Rebuilding Was Done

Many mills had loom-rebuilding programs during the year. Parts such as clutch-and-brake motors, electromechanical clutches and brakes, aluminum lays, center forks, spring-type crank arms, antifriction bearings, and other features of the newer looms were added to the older models.

The trend toward standardization and interchangeability of looms parts continued.

There was also a continued trend toward the use of plastics, alloys, and other materials in loom parts and accessories. The nylon pattern chain is an example of this trend, and another example is the increased use of the plastic shuttle.

Many Mills Used Plastic Shuttles

The plastic shuttle has been available for several years, but most mills used only a few of them for experimental purposes prior to 1957. A growing number of mills are now adopting the plastic shuttle as a standard item of supply.

The expansion of weaving facilities for special fabrics such as webbing, upholstery, and papermakers' felts continued into 1957. The adoption of bigger paper machines has called for wider felt looms. Some looms with a reed space up to 650 ins. were installed.

Some of the specialty weavers are developing their own looms and loom parts. Also, loom makers in other countries are pushing the sale of their machines in this country. There were many more announcements of new weaving developments from European manufacturers than from those in the United States.

Tufting

Bedspreads Join Carpets as Profitable Tufted Textiles

Now that tufted carpets have reached a plateau of profitable business, big companies are developing bedspread tufting along similar lines. Both phases of tufting are becoming more important in textiles, with over-all sales reaching $167-million for the first half of 1957. Sales and profits in 1958 will be even higher because—

- **Newer bedspread machines cut labor costs drastically**
- **Mills will buy more patterned-carpet machines**
- **Newer carpet designs will have more customer appeal**

Tufting, as a whole, became a definite part of the textile industry in 1957. Carpet tufting had outgrown bedspread tufting, which was the granddaddy; while carpets have been important in textiles for several years, bedspreads were still a handicraft until recently.

But in 1957, new patterned-bedspread tufting machines were built that make a complete tufted spread in a single pass of the spread. Formerly two or more operations were needed with much hand work. With this new machine, mills can make 300 spreads in an 8-hr. shift.

Tufting Sales Rise Sharply

After a slow year in 1956, both carpet-tufting and bedspread-tufting sales made a nice upswing during the first half of 1957 (the latest figures avail-

Carpeting sales of $144.4-million for the first half of 1957 increased 11% over the entire year of 1956; the increase was 30% when compared with the first half of 1956.

Tufted bedspreads, with sales of almost $23-million for the first half of 1957, increased 8% over the first half of 1956.

Bedspread tufters got a big lift in 1957 when five new tufting machines became available.

Three mills have already installed the new single-pass patterned-bedspread tufting machine, and others are expected to install at least one test unit soon.

Lower manufacturing cost with new machines should increase bedspread tufting profits and sales in 1958. Other stimulants to sales should be: (1) the wider range of patterns now possible; (2) new man-made-fiber yarns in many colors; (3) metallic, textured, and other decorative yarns; and (4) specialized styling.

Big Mills Move In

All of these factors have combined to bring in big names in mills; and small mills are being pushed out. Only a few mills now manufacture most bedspreads sold. In contrast, many small factories produced 80% of all bedspreads only a short time ago.

The eight big producers of bedspreads are now about equally divided between branches of old established weaving organizations and small tufters that have grown large.

One small producer, for example, started with only two machines 20 years ago and now is one of the eight biggest bedspread manufacturers.

Carpets Make Spectacular Gains

Tufted carpets continue to be the most spectacular development in carpets in recent years. Newer yarns contributed much to better carpets in 1957. Wool yarns are now manufactured so that they run well at tufting machines and are being used by many tufters.

Blends of man-made fibers continue to be a big sales number.

Several mills are using lofted solution-dyed acetates with good sales results, where colors are said to meet the decorative needs for current home fashion trends. Customer acceptance comes from great resilience, colorfastness, and low price range.

Mills Installed 1956 Machines

The only new development in carpet machines in 1957 was a drying range for applying backings with either roller coating or spraying.

Carpet-tufting machines developed in recent years, along with the patterned machines introduced in 1956, gave tufters adequate equipment for present needs; and no new tufting machines were introduced in 1957.

Several mills installed the patterned machines in 1957. New carpet pat-

terns currently being developed on these machines will demand more patterned machines in 1958.

Although tufted-carpet sales were up in 1957, mill expansions planned for the year did not develop.

But confidence in the future of carpet tufting was shown by several yarn-manufacturing mills that began operations or added new machinery during the year.

One reason that tufted sales have grown so steadily through the years is that mills cooperate so well with each other. More than 95% of all tufters are members of the Tufted Textile Manufacturers Association; and through this organization, the mills promote research that has resulted in mutual constant profits at little cost to the mills.

Nonwoven Fabrics

Research in Nonwoven Fabrics May Soon Increase Production

In 1957, many old-line fabric manufacturers eyed nonwoven fabrics for production possibilities. Many of these men are studying the cost of manufacturing the fabric; others are engaged in active manufacturing research in—

- **Blending fibers for best bonding**
- **Arranging fibers for critical fabric thickness**
- **Curing fabrics for soft hand**

The most important happening in nonwoven fabrics in 1957 was a completely new plant for manufacturing nonwovens opened by an old-line manufacturer of yarns and woven fabrics. This plant followed several years of research in manufacturing methods and sales possibilities.

A second company combined two plants for better control of manufacture and distribution.

But the great expansion in nonwovens promised for 1957 turned out to be only moderate expansion; this expansion was mostly by mills that added better equipment for higher output and not necessarily more equipment.

Men interested in nonwovens gave a lot of thought to the fabrics; however, there was more thinking than action. Big-mill names in woven textiles put research men to work on nonwovens and set up sales organizations for plants they acquired.

An international agreement was set up for an English firm to produce nonwovens under the license of one of the oldest American manufacturers.

Promises Haven't Developed

Promises made in 1956 for a nonwoven fabric to come soon with wearing and hand qualities like woven fabrics have not developed. To date, nonwovens are not a big threat to woven fabrics; except in disposable or short-use items, woven fabrics haven't been hurt.

However, nonwovens are pretty well entrenched in interlinings and foundation garments. Their use here comes from their superior qualities and not from a price advantage; the price is often above that of woven fabrics.

Most improvement in nonwovens was shown in filter fabrics, where manmade fibers are used to form a really fine product. The random distribution of fibers in the nonwovens lets the filtered air or liquid through the orifices and holds out undesirable foreign matter much better than the crosswoven threads of conventional fabrics.

Little new equipment to make nonwovens was developed in 1957, but practically all equipment was improved.

Needle-punched-felt production, basically a variation of nonwoven manufacture, was expanded by several mills. Fabrics made with this method provide great strength without a binder or adhesive.

The only two new pieces of equipment announced in 1957 were for punched-felt production: (1) a new needle-punching machine was made in England, and (2) an American manufacturer added an improved clutch to its needle-punching machine.

A machine to trim and slit nonwoven fabric at speeds up to 750 yds. per min. was developed.

Progress was also made in the binders for nonwovens. Existing binder manufacturers improved their products, and many new producers offered binders.

What's Wrong in Nonwovens

Secretiveness by manufacturers attempting to produce nonwoven fabrics is responsible for lack of results as promised in 1956.

Information given freely by manufacturers of fibers, machines, and binders for nonwovens from their own research indicates that all nonwoven-fabric manufacturers are using the same general production methods. The few fabric manufacturers who have opened their doors to visitors and to each other are using similar methods.

Therefore it's evident that most of the research being done by various manufacturers is duplicated and wasted. The only problems in nonwoven manufacture are: (1) blending of thermoplastic and thermosetting fibers for best bonding, (2) arrangement of fibers for critical thickness and strength of the fabric, and (3) curing the fabric for its particular end use.

Together, these problems have not been solved for the soft hand that's

necessary for wearing apparel—the fabric all manufacturers are shooting for.

Nonwoven manufacturers themselves realize that progress is slower than was anticipated. One manufacturer says, "One of the main obstacles to greater progress is the lack of adequate information and communication. Many new processes are being developed in many fields at the same time; and each usually calls for special treatment, handling, and finishing."

One of the pioneers in nonwovens and still one of the most active men in research has explained the lack of results in 1957 by, "Our laboratory technicians and I agree that work based on completely new principles takes a lot of time. Therefore our first samples of our new product will be off the production line later than we had planned."

Possibly many of the newer nonwoven fabrics now in the research stage will be completed soon so that production will surge ahead.

Woolen and Worsted

Woolen and Worsted Mills Improve Processes

- Reduced costs and improved quality are behind the changes that are taking place in woolen and worsted mills
- Worsted systems have been streamlined to as few as four processes. Will worsted mills follow cotton mills' interest in direct spinning?
- Wool fibers are to be improved with chemical treatments to help them compete better with man-made fibers

Worsted spinners continued to change over to the short system of worsted spinning during 1957. French and Bradford spinners became fewer and fewer, and more mills swung over to the American system.

The American system of spinning still differs in mills, but the usual setup at the end of 1957 consisted of two or three pin-drafter or gill-reducer operations followed by a roving frame and the spinning frame. Leveling devices on gill reducers have cut out one of the early operations in some mills. Mill men are expecting pin drafters to be equipped soon with leveling devices.

Gwaltney frames are being used by some mills to spin worsted yarns. These yarns are spun on 11-in. paper tubes that hold up to 12 oz. of yarn.

Worsted spinners are handling yarns with greater care, and special roving trucks are used to handle roving in neat piles. Yarn is handled on trucks built like a creel to support each cone on a spindle.

YARN HANDLING is being improved in most woolen and worsted mills. Trucks specially made to handle roving are used by this mill. Other mills use collapsible wire containers that are moved by lift trucks.

Machinery Is Kept Better

Preventive-maintenance programs are being installed in more mills to keep machinery in better condition. One mill uses a checklist for each machine in the mill. When the machine is overhauled, the checklist is used to show whether important items on the machine are good, fair, or bad. After the work is done, the reports are checked by the control department, which supervises the overhaul schedule.

Another mill completely dismantles its machines and rebuilds them at 6- or 12-month intervals. All worn parts are replaced during the overhaul.

High-bulk yarns have proved a boon for many spinners. Many techniques have been adopted to improve the quality of these yarns.

Some of the practices that are used include better temperature controls on the Turbo stapler, faster cooling of the stretched fibers by air fans or refrigeration ducts, and better feeding arrangements for the tow as it enters the stapler.

Electronic eyes are being used to stop machines when an end falls on pin drafters and staplers. Bridges on reducers keep the sliver from the back cans from sagging and stretching.

Sliver cans are usually weighed after the first pin-drafter operation and balanced to give an average equal weight

for each can. Cans that are 8 oz. off standard are sent back to be rerun by one mill.

Sheets Separate Machines

Mills running man-made fibers and wool yarns on adjacent machines are hanging polyethylene sheets between the machines. This practice keeps the fibers from migrating and contaminating yarn where the foreign fibers would shows as specks when the yarn or fabric is dyed.

Mills are taking great pains to keep Orlon yarns from becoming mixed because different lots have different shrinkage and dyeing characteristics. After each lot of Orlon has been processed in one mill, the machines are thoroughly cleaned with an air hose before the next lot is run.

Tow-dyed yarns present some problems, and cleaning schedules are even more thorough when these yarns are run. Dyed tow in one mill is blended by running together the tow from eight different cases. Two extra gilling operations are given for further color and shrinkage uniformity.

Spinning tow-dyed yarns has been simplified with optical devices at each end of the frame. A strong beam of light shines along the frame opposite the yarn above the spindles. Ends down are quickly noticeable.

Blends of high-shrinkage fibers with wool offer promise for spinning into yarns for knitting and weaving. The man-made fibers, which may be Acrilan, Orlon, or Dynel, can be stretched and broken on the Turbo stapler and blended in subsequent operations with wool.

The percentages to give the best results will have to be worked out. The result should be a loftier blended yarn that bulks the wool when the fabric or yarn is subject to a heat treatment. The high-shrinkage fibers contract and migrate to the center of the yarn.

Orlon Yarn Resists Pilling

Because sweater knitters are turning to textured yarns, some mills producing high-bulk yarns are trying to promote these yarns for hosiery and woven goods.

High-bulk yarns tend to pill readily, and one mill has solved this problem by mechanically treating the Orlon fibers. Special spinning, knitting, and finishing techniques are combined to produce yarn suitable for socks.

Automatic application of emulsion on wool stocks saved emulsion costs in some mills by making even applications of the emulsion to opened fibers after the stock leaves the picker.

New tinting agents suitable for man-made fibers were introduced in 1957 to solve many problems of mixed stocks.

Materials-handling methods are being revised in woolen and combing mills. Collapsible metal containers are now used to store yarn in some mills. Overhead rails deliver sliver balls to combers in one mill.

Quality-control methods are being tightened up in woolen and worsted mills. New methods of sampling are being tried, and new testing instruments are now used that take some of the guesswork out of judging qualities.

Better methods of making wool shrink resistant, wrinkle resistant, and moth resistant are coming along. The year 1958 might see commercial applications of the epoxy-resin method of treating wool for shrink resistance.

New developments in carbonizing and scouring are reducing costs and improving quality. These developments are all helping wool to compete better with man-made fibers.

Throwing

Filament Yarns Are Becoming Textured

- **The modification of man-made filament yarns by various mechanical treatments is good news to throwsters who have experienced some lean years since knitters and weavers started using man-made yarns without twist**
- **Several of the seven or eight established processes are to be combined to produce just the right yarn the weaver or knitter wants**

The year 1957 might go down in history as the year that textured yarns really started to roll. Although these yarns have been made for knitwear and hosiery for two or three years, mills are now eyeing them for such end uses as carpets, upholstery, and dress goods.

Throwsters have experienced some lean years since knitters and weavers discovered that man-made filament yarns can be processed without twisting. The new textured filament yarns can be instrumental in bringing many idle spindles into action again.

The number of textured yarns is steadily growing. Yarns such as Spunized, Myloft, Saaba, and Leferon will give the older textured yarns such as Ban-Lon, Agilon, Helenca SS, Tycora, and Taslan some stiff competition.

Most throwsters now have licenses to use many of the processes such as Agilon, Helenca, Taslan, and Ban-Lon. These processes are now being combined to give the weaver and the knitter just the type of yarn he requires.

Most textured yarns are nylon, but some of the new processes can treat viscose and acetate yarns. More efforts will be directed toward the successful processing of cellulosic yarns because of their lower price.

Some cotton and worsted mills are eyeing these developments closely. Mills producing high-bulk acrylic yarns have been hard hit because many of their customers switched from high-bulk yarns to textured yarns. Some of these mills have already put in equipment to produce textured yarns.

Textured-yarn producers are anxi-

ous to push their product into carpets because this phase of textile manufacturing consumes such heavy quantities of fiber. Surface effects, resistance to pilling, and extra-good cover are some of the properties of the new yarns.

Yarns introduced in 1957 include Saaba and Spunized. Saaba is produced by treating a stretch yarn such as Helenca, Superloft, or Fluflon on a No. 511 Universal downtwister equipped with a heating chamber and feed rolls. Some of the stretch is removed, but the yarn retains its bulk.

Spunized yarn has excellent bulk and is processed in batch form from a creel. The fibers are crimped between plates and then treated in a heat-setting cabinet.

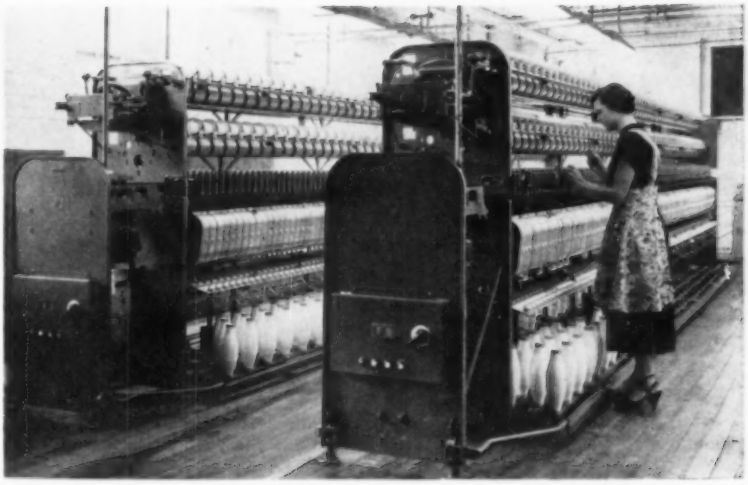
Many of the bugs in processing metallic yarns were ironed out in 1957. New tension devices were introduced that stop the spool overwinding when the machine stops.

More mills swung to Mylar-covered metallic yarns, which are easier to process than the earlier metallic yarns. Experiments with metallic staple yarns are continuing.

Stretch Yarns Are Improved

Mills processing stretch yarns are discovering new techniques to make better yarns. Better control of temperature is practiced by most mills, and portable pyrometers are used to check each heater block in one mill at least once weekly. A new British machine has a dial on the machine that records the temperature of each heater block every few minutes.

This same machine has a spindle speed of 70,000 rpm., but current U.S. practice is to run false-twist spindles at 30,000 to 36,000 rpm. Stroboscopes are used by some mills to check the position of the yarn on the exit wheels.



STRETCH-YARN MACHINES are turning out better stretch yarns because of tighter maintenance schedules. Some of these machines will be used with other machines to produce some of the new textured yarns.

Better maintenance of heater blocks is practiced. In one mill, the blocks are cleaned with solution while the block is hot. Spin finish is loosened and removed with a portable vacuum cleaner.

Many of the techniques learned in handling stretch yarns will prove useful to mills that are about to embark on the production of the new textured yarns.

Knitting

Knitters Are Solving Technical Problems

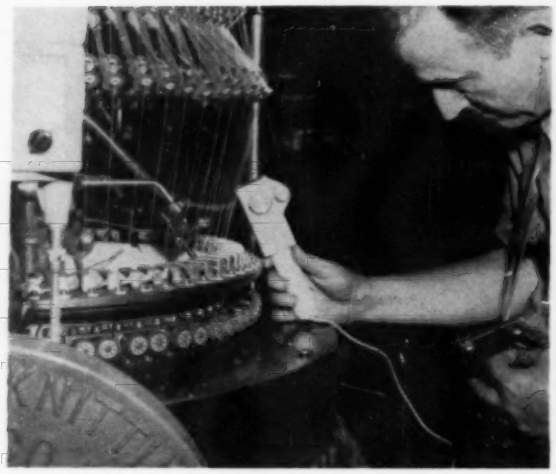
- Women's hosiery mills are solving length-control problems
- Men's hosiery mills are developing new styles to increase sales
- Underwear mills are concentrating on shrinkage problems
- Outerwear knitters are solving problems in textured-yarn knitting

Women's-hosiery mills changed more in 1957 than most other knitting mills. Full-fashioned mills continued to install seamless equipment, although this trend slowed down near the year's end.

Many two-feed seamless machines were introduced in 1957, but mills were somewhat reluctant to use these machines or even to convert their present single-feed machines to two-feed machines. Some of the problems connected with two-feed knitting were conquered in 1957, but mills are afraid of streaky stockings caused by uneven stitches.

The problem of holes caused by the withdrawal of the two-feed attachment was solved by knitting two yarns at the change for a number of needles or by tying in the yarn with tuck stitches. The problem of cutting long ends was solved on one machine with an electrically heated wire that burns the yarn.

Length-control problems received lots of attention in 1957, and more



NEW INSTRUMENTS used to set up knitting machines include meters that measure the speed of the yarn traveling to the needles.

STITCHES are automatically counted on this device to help keep full-fashioned knitting machines producing the same-size garments at all times.

devices will be introduced in 1958 to help combat this problem. These devices will take the form of yarn-tension controls or automatic controls that keep the stitch adjusted to the correct size.

New instruments for checking the lengths of hosiery that largely eliminate the human error found increasing use in full-fashioned and seamless mills. Ceramic throat plates that need little replacing and don't cut the yarn have proved a boon to seamless-hosiery knitters.

A machine that knits the heel and toe without moving into oscillatory motion was reported, but no mill installations are known. A machine that knits the heel and toe in two feeds was announced, but all the bugs are not yet worked out of this development.

The problem of training seamless-hosiery workers was solved in some mills by using special training systems that cut training time and make better knitters, fixers, and loopers. Some mills used systems that allow one knitter to increase her workload from 30 to 36 or even 50 machines.

Knitting Costs Are Reduced

Some full-fashioned hosiery mills did install automatic machines that allow one knitter to look after two machines, but most mills could not afford to buy new equipment. Some mills, however, did reduce costs by using a knitter and a helper on two machines or two knitters on three machines.

More full-fashioned-hosiery mills switched to products other than hosiery. Underwear garments such as panties are now made on hosiery machines from stretch yarns, and outerwear garments such as sweaters are made on regauged hosiery machines.

More attention was paid to hosiery-dyehouse costs in 1957. Automatic controls were added to boarding machines to allow boarders to do their work quicker. This year will see more mill installations of automatic combination dyeing and boarding machines. One hosiery mill installed a conveyor system to speed up color matching. A conveyor continually travels around the dyehouse to pick up samples from each section and return them to the section after color matching.

Style Changes Are Made

Developments in men's and children's hosiery concentrated on refinements to pattern machines to produce more-varied patterns. Several new styles of socks were also reported. These styles included socks with a new rubberless top, socks with buckles, socks with unusual heels, and cotton socks with stretch heels and toes.

Crawford's AA3 argyle machines can now knit three-dimensional patterns, and ten colors can be used. Textile Machine Works' CK-A machine has an overplaid attachment with a five-finger striper attachment on each feed. Hemphill's SCOP-SE pattern scope has been increased to 50 steps so diamonds can be made in one-needle steps.

Several men's-hosiery mills swung over to the production of bobby socks. Fidelity Machine Co. introduced a children's-hosiery machine with a 10-color yarn selector and knot tyer.

Underwear mills are changing many of their products to conform with modern living. Knitted pajamas in bright colors are a new and valuable product.

More knitted athletic and sports garments are being made by underwear mills. Some mills are introducing children's lines for the first time to cash in on the postwar crop of babies.

There is a greater interest in shrinkage methods in underwear mills. Interest centers on both mechanical and chemical shrinkage controls. Knitters are paying more attention to correct knitting methods, rather than hoping that correct finishing will mask poor knitting practices.

New Instruments Help Quality

These knitting practices include setting up machines with scientific instruments instead of by rule-of-thumb methods. These instruments measure the speed of the yarn consumed by the machine or the length of yarn in one or more courses. These instruments are being continually improved.

New quality-control methods are being introduced in underwear mills to reduce faults in cloth. Incentive systems for knitters and fixers are being developed.

Outerwear mills are solving the problems encountered in knitting textured yarns. The techniques used to knit even stitches included the use of yarn compensators and tension meters to set up knitting machines.

New tension devices introduced for hosiery-length control will also prove satisfactory for some of the problems in textured-yarn knitting. Techniques used in hosiery mills to reduce pull threads are being used successfully in outerwear mills knitting Ban-Lon, Tycora, and Saaba yarns. These methods include the use of hand creams for

workers, polyethylene-covered trucks and work baskets, and training in careful handling.

Sweater Production Increases

Mechanical methods for separating garments are on the way to speed up the separating operation. Knitting production has been increased by machines with 32 feeds that produce about 4-doz. sweater pieces per hour.

Single-section full-fashioned-sweater machines were introduced in 1957. These machines have several advantages over their multisection brothers that include easy maintenance and greater flexibility when small lots or samples are knitted.

Full-fashioned-sweater machines are being equipped with attachments for intarsia, lace, and other stitches that cannot be duplicated on circular machines. Outerwear machines are also being used to produce garments other than sweaters. One mill knits full-fashioned skirts on these machines, and the possibilities for unusual merchandise are immense.

Knitted pile fabrics have been receiving much interest because of the new end uses they are going into. Automobile upholstery and floor coverings are some of these end uses, and new machines are being developed to produce these fabrics.

Finishing these fabrics presents a big headache. Techniques are being borrowed from the tufting business and finishers of fur and woven fabrics. There is need for a lot of research and development to be done in this field.

Warp-Knitting Problem Solved

Many problems of the warp knitter were solved with the introduction of electronic scanning devices that stop the machine when a fault occurs. This development has proved particularly useful on the new high-speed tricot machines that knit at 900 courses per minute and produce about 18 ins. of fabric per minute. On other machines, the work assignments have been doubled.

New devices to control the runner lengths are being developed. One such device allows the knitter to check the runner lengths without stopping the machine.

Raschel mills are in a period of change. Many old two-needle-bar machines were dusted off to knit the popular thermal-knit underwear fabrics. Mills are trying to push these fabrics into other end uses. Outerwear and pajamas seem to be the most likely spots for this venture.

Mills are installing raschel machines with more and more bars. The latest machines have 18 bars. While the raschel machine will never replace the lace machine, big dents have been made in the lace market with raschel laces that closely resemble real lace.

Reports are circulating that raschel-machine speeds will outpace tricot-machine speeds. This development will not influence the jersey tricot business, but it might create havoc with the fancy jersey tricot business because all the fabrics made on a tricot machine can be duplicated on the raschel machine.

Faster machine speeds, more feeds, and new yarns all contribute to the knitters' problems. As fast as he conquers one problem, along comes a new development to improve his product or increase his production; and then, a new challenge is offered.

Chemical Treatment

Better Methods And Materials For Chemical Treatment

Chemists and engineers working in the field of textile-chemical processing in 1957 took significant strides toward the goals of continuous processing and the production of better fabrics. The major developments include—

- **A new class of dyes for cellulosic fibers**
- **Improved single-stage bleaching for cotton**
- **Wider application of resin-type thickeners in print-color pastes**

Developments in 1957 in textile-chemical treatment have accelerated the trend toward continuous processing, better dyeing methods, better color fastness, and improved wash-and-wear finishes for cottons.

In the past year, the continuance of efforts to improve chemical processing have paid off. There has been a major break-through in dyestuffs that has produced the first really new class of dyes for cellulosic fibers in a generation. Problems connected with producing dark shades and even dyeings on polyamide and polyester fibers have been considerably lessened, if not entirely solved.

Improved pigment-resin formulas have widened the field for pigments in printing. The most significant recent development has been the use of emulsions of the new binders and thickeners with fast colors.

Advances in the preparation of water-in-oil and oil-in-water emulsions that are stable to electrolytes have made possible the use of many dyes that once were totally inapplicable by emulsion techniques.

The important advantages of the emulsions as a printing medium are a generally better color yield and the fact that the low-solids content leaves the fabrics soft and receptive to finishes. The latter is most important when resin finishing follows.

Bleaching systems for cotton fabrics have reached the stage where many types of cotton fabrics go from the

gray state to full white in a couple of hours or less.

The earlier two-stage processes have been simplified to a one-stage method that skips the caustic preboil. A system that uses both chemic and peroxide to produce fully bleached goods in a continuous system has been put into use this year.

Higher temperatures in improved preheating chambers have helped to bring about the one-stage process of bleaching.

The popularity of wash-and-wear finishes on cotton dress goods, and more lately men's shirts, has grown to an estimated 25% of the yardage finished for these uses. The weak spots of these finishes—initial loss of tensile strength, chlorine retention, and undesirable yellowing—have been given a great deal of attention.

Unfortunately, the initial loss of tensile strength is still in the neighborhood of 25 to 30%. There has been a lot of improvement in reducing damage from chlorine but at an increased cost for materials.

There is also an element of compromise in the efforts to cut down chlorine-damage potentiality. The materials that are least susceptible to chlorine retention often produce high initial strength loss or do not give a really satisfactory wash-and-wear finish.

However, very fair results from all angles have been produced by blending resins such as the epoxy types with cyclic-urea resins.

Engineering and Maintenance

Electronics Opens New Areas In Engineering and Maintenance

Mills applied three new electronics developments to old jobs in 1957. The results of two of these developments are faster payroll processing, up-to-date data on marketing trends, and facts to forecast future customer needs. The third development opens new areas for—

- **Combining payroll calculations with machine output**
- **Machine- and employee-performance evaluation**
- **Inventory control of all materials in process**

A wider use of electronic equipment was the most important single development in mill engineering and maintenance in 1957. Two mills installed a magnetic-drum data-processing machine, which is the latest development in electronic-computing machines. A third mill was studying possible results of this machine at this writing and may have installed the machine by this time.

With this machine correlated with other existing electronic equipment at one mill, the payroll of 12,000 employees is maintained, calculated, and printed in 12 hrs. The machine is also used to purchase and control supplies; a complete record of over 100,000 supply items is kept.

Other Areas Are Explored

Other areas of calculations with the machine are expected to be billing, accounts receivable, raw-products accounting, inventory control, finished-goods records, and order allocation.

The sales office of a third textile-mill chain added the random-access method of accounting and control as the first electronic machine of this type in textiles. It is used for keeping the sales department up to date on current marketing trends and for forecasting future customer requirements.

One of these machines has also been ordered by the mill organization that installed the first drum-data processing machine in textiles in 1957.

Electronics was also applied to textile production in 1957 when one mill used a centralized mass-counting system on 60 looms to measure machine and employee performance. The system promises to combine payroll calculations with plant machine output.

In final form, the system is being planned to raise plant production to the highest possible efficiency and to control inventory of materials in process.

Controls Use Increases Rapidly

A greater application of control instruments was also an important development in mill engineering in 1957. Evidence of increased emphasis on control instruments is shown by mill purchases of regulators, multi-motor drives, air-operated tensions, air conditioning, finishing-range speed controls, limit switches, automatic packaging, pH control, and air-flow and dye-padder controls.

Instruments, electronics, and thermodynamics are proving valuable to mill men; and these controls will be used more widely as mill men learn more about their operation.

Why Control Use Is up

Perhaps the reasons mills showed more interest in controls than any other engineering equipment is that control manufacturers offered a lot of new instruments; for example:

1. A pneumatic computing relay to perform six different arithmetic functions for fuel-air flow rationing, boiler-swell compensation, and flow totalizing on multiple lines.
2. A photoelectric sensing head developed to correct the travel of fabric edges through finishing machines.
3. An instrument to control liquid level and consistency. The instrument also controls steam, water, and air in production consumption.

4. A solenoid-operated power transmitter to start and stop spoolers and winders up to 40 times per minute. The clutch brake can be operated by start-stop push buttons or by limit switches, sensing devices, or timers.

Many Plants Have New Lighting

Plant relighting was second to controls in mill interest during 1957. Expenditures for new lamps were high, especially in the first part of the year.

Several mills relighted large production departments. One mill completed a $130,000 relighting project, but it postponed another planned project for relighting a second large production area.

Many mills have small test installations of the newest lighting: (1) upward-component fixtures and (2) high-output rapid-start lamps.

Two new tubes announced by lamp manufacturers during the year with double the output of regular tubes were not as successful as expected in industrial installations; the candlepower fell rapidly after installation. A third tube just recently marketed is said to have overcome this failure.

Production Gets New Equipment

One engineering development completed in a mill early in 1957 was group electrical braking of cotton spinning frames. With these units, four or six spinning frames are braked in groups. The mill installed this system of braking on 76 frames.

Improved materials-handling equipment became available during the year. Most improvements were in strapping machines, where automatic controls became common. Now in a finishing mill, unsealed cartons can be placed on a conveyor, weighed, recorded, and addressed without an employee.

As in 1956, mills had a large number of new textile motors to choose from in 1957. Manufacturers broadened their lines of motors with the new NEMA frame sizes.

With all motor manufacturers going to totally enclosed motors, motors under spinning frames and finishing machines are common.

Another interesting and versatile motor development in 1957 is three gear motors that can be used with standard NEMA motors.

Small materials such as casters, machine mounts, and improved parts for floor-treating machines were developed during the year.

Maintenance Methods Improved

The year brought a new consciousness of fire safety. In one carpet-weaving plant, for example, a new fire-control system was installed that reduced the fire-frequency rate so much that insurance dividends received paid the entire cost of the new system.

Another plant, by evaluating its maintenance methods in twisting, spinning, coning, cheesing, and beaming, reduced its maintenance labor cost 50%. Now, about 80% of the manhours of all maintenance workers are scheduled daily.

Few new plants were built in 1957; and the plants that were built were for yarn manufacture, primarily for tufted and woven carpets. One large finishing plant swung into operation during the year.

Mill additions were also few in number. Construction methods in additions followed closely the patterns of existing buildings; and as a result, no new building methods were developed.

Modernization in '58 Will Be Cheap

Since 1957 was a year with limited building and production-machine modernization, many mills missed a good bet in not renovating plant-maintenance facilities. Plant engineers and master mechanics had a relatively easy time. Their spare time, and the spare time of their basic maintenance crews, could have been well spent in repairing roofing and building structures, overhauling motors and boilers, replacing electric wiring, and repainting.

By reviewing the new engineering equipment developed during 1957, analyzing the newest maintenance methods, and fitting them both into the 1958 improvement program of a mill, mill engineers can take up the slack in their labor schedules and modernize their facilities at little cost.

Testing

Testing Instruments Take Guesswork Out of Textiles

- **Time-honored professions such as wool sorting and cotton classing are being displaced with electronic instruments that measure fiber diameter, length, and density**
- **Setting up textile machines is becoming easier with instruments to test tension variations and yarn speeds**
- **Instruments to test wrinkle measurement, crease recovery, and stiffness are proving valuable to fabric engineers**

The increasing use of electronics in textile-testing equipment is bringing more-scientific methods of classing fibers and setting up processing machines to textile mills. These instruments are outdating rule-of-thumb methods and eliminating the errors caused by human differences.

One wool-combing mill uses a projector to check fiber diameters. Wool is cut into small pieces and placed on a slide. The enlarged image of the fibers is projected on the screen, and a wedge card is laid over the fibers to discover their average diameter.

Another mill uses an electronic fiber-fineness indicator to discover the

CONTINUED ON PAGE 188

MASS-COUNTING SYSTEM requires only a small space in the weave-room office, The basic equipment is permanent, but the standard typewriter can be removed to substitute other calculating instruments.

Textile Automation—

New Mass-Counting System Analyzes LOOM OPERATIONS

- The Kendall Co. has taken a new giant step in textile automation.
- Centralized mass-production control is now possible with a new electronic system being used to measure machine and employee performance on 60 looms. The trial system has two ultimate objectives—

1. Highest possible plant efficiency
2. Minimum in-process inventory

A NEW ELECTRONIC MASS-COUNTING SYSTEM promises to interlock machine-production figures with payroll calculations for complete automation of both phases of mill calculations.

This Auto-Count mass-counting system was developed jointly by production men at The Kendall Co., Cotton Mill Div., Oakland Plant, Newberry, S. C., and Strandberg Engineering Laboratories.

The electronic system in its simplest form is a centralized pick counter. The weave-room overseer can sit in his office and know the efficiency within 100 picks of the block of 60 looms at any given time during the day.

Other instruments in sequence with a standard typewriter give data on:

1. The looms stopped, the loom numbers of the stopped looms, and the duration of each stop
2. The loom speed of each loom in the group and fluctuations of speed within 0.25 ppm.
3. The total individual production of each loom in the group

For analyzing loom stops for workload tests on warp or filling yarn or for any other loom-stop study, the stops of the group of 60 looms can be isolated by an attached instrument, a sequential-information converter. Isolation includes, for example, up to 10 styles of fabric in a 60-loom group.

Weavers and loomfixers don't know that loom stops are being checked on their looms, and therefore the checks are made in a normal way without the usual nervous condition of employees during loom studies.

The system is flexible in that only the simplest data to almost any desired data can be compiled. At present, in addition to a specially adapted standard typewriter that records simple production data, two other pieces of equipment fit into the setup: (1) an individual-machine analyzer and (2) a production integrator.

One significance of the development is that the data are reduced to their simplest form immediately so that production men can take action for two final objectives: (1) the highest possible plant efficiency and (2) to hold in-process inventory to a minimum.

The individual-machine analyzer provides the following standards-department information:

1. A chronological strip-chart recording that shows the time of each start, the duration of the run, the time of the stop, and the duration of the stop

2. The total downtime registered in tenths of minutes

3. A registration of the total number of stops

The production integrator gives these standards-department data:

1. A chronological strip-chart recording of the total-group running percentage of efficiency or a numerical recording of the number of looms operating at all times to give the exact degree of machine interference

2. A visual indication of the particular looms that are down and the ones that are running

3. A registration in tenths of hours of the duration of the test

4. A registration of the total loom hours of production

All tests of the equipment have been made on looms because large lots of machines are concentrated in a small area, which has made the tests more economical. But the system is equally applicable to other production machines that produce hanks, yards, or any other countable material.

Other Equipment Will Expand Uses

Only about 10% of the immediately accessible information that can be brought to a control place is being used. These data are gathered by sturdy equipment that will give little trouble in operation.

Many additional uses of the present equipment will come from electronic-computing equipment already in use that can be adapted to the instruments.

The over-all significance of the system appears to be:

1. The running production in picks, hanks, yards, and hours of all machines can be known at all times.

2. This information can be coupled with inventory information to show where material shortages and bottlenecks will occur unless changes are made promptly.

3. The workload of a weaver, for instance, can be set quickly and accurately by known efficiency and machine interference.

4. Comparisons and cost studies can be made spontaneously to show which yarns or fabrics are not running profitably. The vicinity of the trouble is also obtained.

5. A good inventory system can be set up that can be adjusted constantly and automatically by such totalizing data as yards in and yards out. This system will show immediate quantities of inventory transfers between departments of a mill and between different mills.

ARMORED CABLE fitted to the standard pick counter is the only part of the mass-counting system that's in the weave room.

Mechanics of Mass Counting

The Auto-Count system on the block of 60 looms at Oakland Plant begins with a short-duration impulse switch actuated by a pin on the pinion of a modern standard pick counter on each loom. The switch closes momentarily once each revolution of the pinion and provides an electrically countable series of pulses exactly related to units of production.

Accelerated tests at the mill at 210 times regular operating speeds indicate a life expectancy of a minimum of six years for the impulse switch.

An armored cable carries the conducting wire out of the pick-counter case to a standard intercom cable under the mill floor, where cables from all looms join in a trunk line that leads to the data-receiving panel in the weave-room office.

Entire Weave Room Can Be Set Up

This central board represents a layout of all the looms in the group of 60. Each loom is represented by four small jacks labeled by loom number.

For an entire weave room, the board would be a layout of all looms.

A random-to-sequential-information converter receives data from the data-receiving panel through 60 jacks identical to those in the receiving panel. Up to 60 looms can be patched into the converter, and up to 10 outputs can be taken from the unit with each output containing the total production of each selected loom fed in.

For instance, the total production of 50 looms is fed out on one line while nine other lines carry the production of any desired groups and overlap the first group or any other group. And if desired, the production of only one line is fed out on one line.

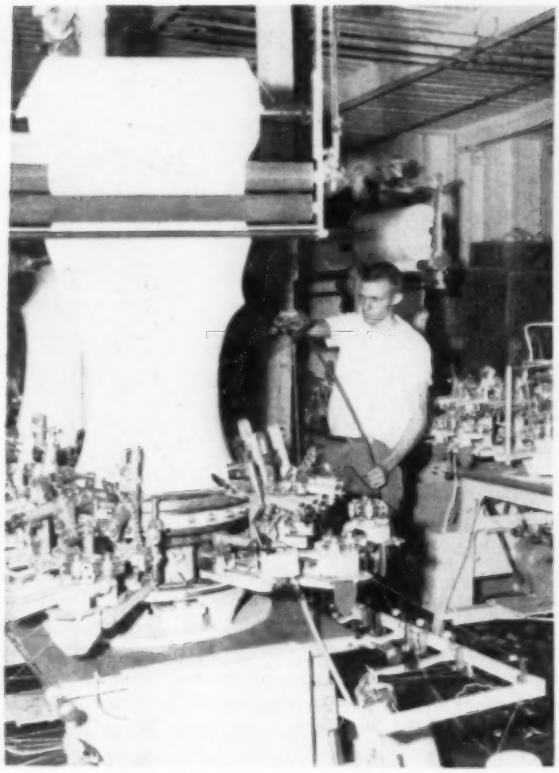
Totalized Efficiency Is Constant

A register panel receives the totalized data by patch cords from the random-to-sequential-information converter and constantly registers the data in three individual panel-mounted counters, one for each shift of operation. Totalized data are reduced to hundreds of picks.

Computing is done by either of three machines that are plugged into the system individually: (1) an individual machine analyzer, (2) a production integrator, and (3) a standard typewriter. These instruments are easily patched into the data-receiving panel.

By adding a Chatham stop counter at the looms, the charts can break down each loom stop into warp or filling stops. Mechanical stops can be indicated also.

In a weave room fully equipped with mass counting, totalized efficiency would be registered constantly for all looms; but machine analysis would be registered only as required in blocks of 60 or 120 looms or any fraction of these numbers.



SPRING-NEEDLE MACHINES are not equipped with automatic cleaning but have new brakes that stop the machine instantaneously and prevent backlashes and faulty work.

LATCH-NEEDLE MACHINES are 22-cut machines. All cones on one machine are changed at the same time. New machines have four needle protectors and eight hole detectors.

KNITWEAR Products and Methods Change At Griffin-Jaco Mills

Just a few years ago, heavy underwear was a staple line at this Georgia mill. Today, such items as T-shirts, pajamas, and athletic shirts are being manufactured. Changes in style have brought about changes in methods and machines that include—

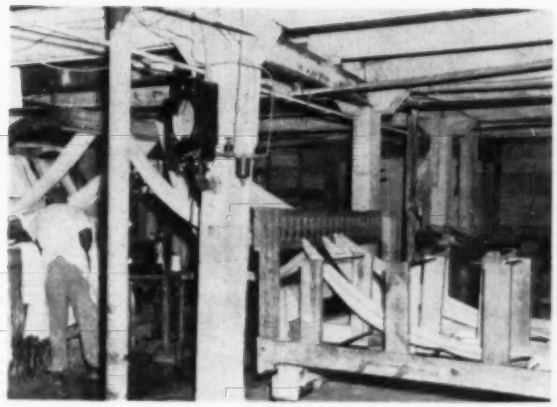
- **New knitting machines**
- **Automatic dyehouse controls**
- **Lint-removal systems**

A CHANGE IN KNITWEAR PRODUCTS at Griffin-Jaco Mills, Inc., Griffin, Ga., has brought along changes in machines and methods. Just a few years ago, the staple product was heavy underwear. Today, the products made at Griffin-Jaco include T-shirts, sweat shirts, pajamas, athletic shirts, and other garments for men, boys, girls, and infants.

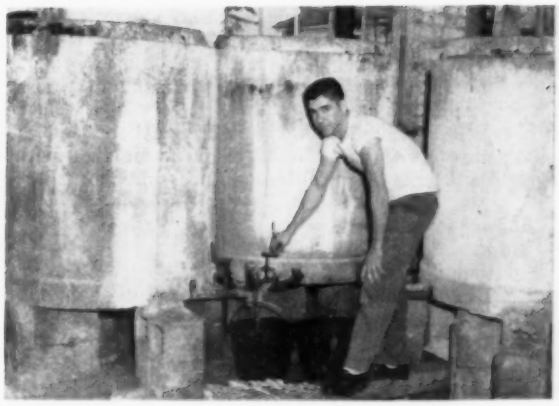
Some of the physical changes at the plant include new knitting machines, automatic controls in the dyehouse, a lint-removal system in the napping room, and modern packaging methods.

Seven new Tompkins tables have been added to provide more fabric for sweat shirts. Old machines have been scrapped and the machines rearranged to accommodate 26 tables in one room.

The new machines are D-2 machines, but they have no automatic air-cleaning equipment. Griffin-Jaco prefers to blow lint off the machines with an air hose.



AUTOMATIC CONTROLS connected to each dyeing machine save time and waste. Up to 17 ends of cloth are fed to each machine from this truck, which holds one dye batch.



CONCRETE TANKS instead of carboys are now used to store chlorine. Chlorine is pumped from the tanker truck into the tanks. Rubber buckets are used to supply the reels.

New Machines Are Improved

The machines are all 20-gauge. Light, medium, and heavy fabrics are made on the same machines. A new friction on the take-up rollers allows the machines to stop faster and avoid many faults.

An electric brake has been added to the new machines. A fiber-lined brake shoe is pushed against the cylinder when the stop motion operates or the motor is stopped. This device has stopped backlash and helped to reduce faults.

A ¾-in. gear-head motor on each head now gives less trouble than the original motor. Feed wheels have been equipped with Oilite bearings for smoother running.

Three-point electric stop motions on each end of yarn allow knitters to look after 120 feeds. Head sizes range from 14 to 21 ins. Three feeds are arranged on 14-in. cylinders, four feeds are on 16- to 20-in. cylinders, and five feeds are on 21-in. cylinders.

The spring-needle machines are set up by measuring 6 ins. of yarn, and the number of needles are counted for the correct stitch. Latch-needle machines, however, are set up with the Hamilton stitch meter.

New Brinton machines have been added to supplement Tompkins latch-needle machines to bring the total to 35 jersey machines. These machines have been moved to a room to segregate them from the spring-needle machines.

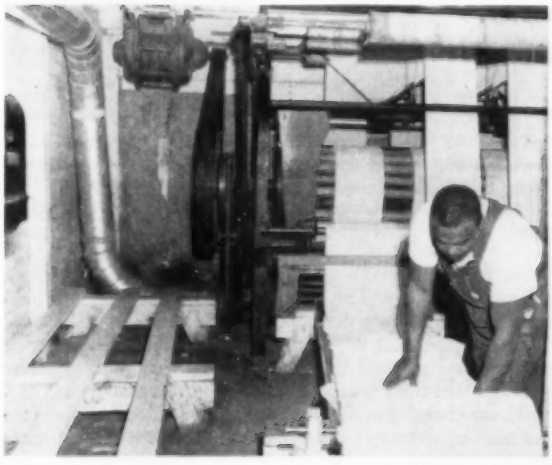
All jersey machines are 22-cut 50-gauge machines in all body sizes with up to 54 feeds on 19-in. cylinders. Cotton yarns that are run include 20s, 24s, and 26s to get the range of fabrics required.

New Brinton machines have four needle protectors and eight hole detectors. When a machine is creeled, all the cones are changed at one time and all cones are pigtailed; so the machine runs for about 7 hrs. before the yarn is renewed.

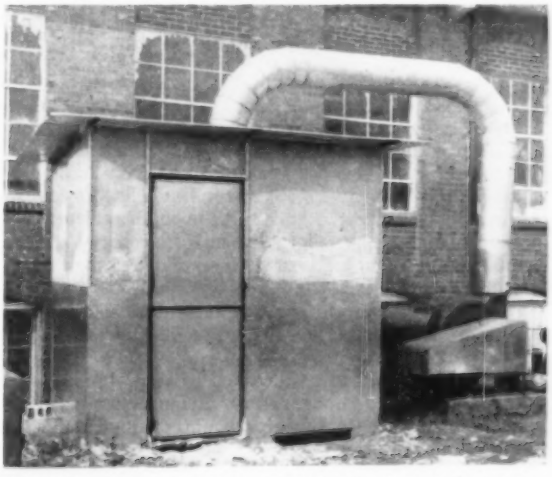
All machines have 1-hp. motors, and they are laid out in five rows with lots of space between each row. Quality-control checks are made in the cutting room, and the knitting room is informed of excessive faults in the fabric.

Automatic Controls Save Time

Automatic controls have been installed on each reel to save time and keep quality at a constant level. Most fabrics



NAPPING ROOM is kept free from lint with a V-shaped trough that runs under the napper. Lint now goes through the 12-in. pipe at the left and doesn't get on the fabric.



LINT is drawn into this wire-mesh and galvanized-steel container outside the napping room. Suction in the system is provided by the 5-hp. motor at the right.

are bleached and given a fluorescent tint. The reels process 15 or 17 ends or up to 700 lbs. of fabric.

Fabric rolls are loaded in the reel from a truck that holds up to 17 rolls of fabric on spindles that turn the roll as fabric is pulled off the reel.

A typical bleach consists of several operations, and the automatic controls have eliminated many mistakes in the dyehouse. Here's a typical bleach on T-shirt fabrics:

Boil off for 40 mins.
Rinse
Add chlorine
Run for 1 hr. at 125° F.
Three rinses
Add bisulfite
Run for 18 mins. at 120° F.
Add fluorescent dye
Run for 20 mins. at 160° F.
Three rinses
Add noncurl finish
Run for 15 mins. at 80° F.
Final rinse

Hypochlorite solution now arrives at the plant in a tanker and is pumped into concrete tanks sealed with a special treatment. This method is a big improvement over the old method when the solution was poured from carboys.

Rubber buckets that hold 25 lbs. are used to feed the solution to the dyeing machines. One bucketful is used for each 100 lbs. of fabric to be processed.

How Nappers Are Kept Clean

The napping room has been modernized with an air-cleaning system that keeps the napping room as clean as any room in the mill. Two 90-in. nappers are used on all sweat-shirt fabrics.

The final napping process is done on a double-acting napper, which has a faster cylinder than the first napper. The fabric is reversed above both nappers and put over the cylinder a second time.

Lint that floated about the napper room and frequently alighted on the fabric is now drawn through V-shaped troughs built under the napper cylinder. From the trough, the lint is sucked through 10-in. pipes that unite in a V-piece to a 14-in. pipe.

Suction in the pipes is supplied by a fan driven by a 5-hp. motor. An extra adapter is supplied if a third napper has to be run from the same system.

Lint Is Drawn Into a Box

Lint is exhausted into a galvanized steel box built outside the napping room. The box is 10 ft. high and 8 ft. square. A fine-mesh wire covered with a heavy-mesh wire covers the top half of the walls of the lint-collecting box.

Lint is blown into the box, and the mesh screen keeps the lint in the box but allows the air to escape. Windows in the napping room are kept open to allow enough air to be drawn through the system.

Lint is collected from the box on alternate days, and the mesh screen is cleaned. Lint is saved and sold to waste dealers.

Drying capacity has been doubled to allow 18 pieces of cloth to be dried at once. A pipe-drying system is used. Hot air is supplied to the pipes from steam-heated coils and distributed through the duct work by a 24-in. fan.

Many new sewing machines have been added to make the new products. The machines are arranged in the unit system where each unit processes one style.

Many garments are now being individually packaged in polyethylene bags. The bags are filled while they are held under a metal chute developed by the mill.

An electric heat-sealing unit is then used to seal each package and trim off the excess polyethylene. Six of these packages are then placed in boxes for shipping.

These changes at Griffin-Jaco have resulted in the production of garments that are not so seasonal as former products. Steadier employment is one result of this change. The mill is also keeping its workers and machinery busy by cashing in on the postwar crop of babies and swinging toward the manufacture of more children's garments.

SEWING MACHINES are arranged in units. Each unit processes one style. A string with an easy-clip device is used for bundling the garments, which are becoming more varied.

PACKAGING of many styles is done in polyethylene bags. Garments are slipped into the bags with the aid of an inclined chute, and the bags are machine sealed and trimmed.

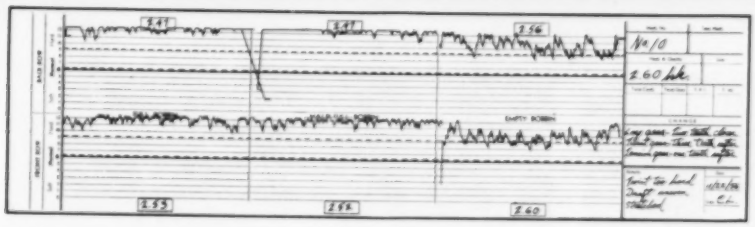


Chart A—
BAD ROVING is indicated by this chart. The pattern shows that twist is too hard in the middle of the bobbin, drafting evenness is irregular, and the roving is stretched. Linear evenness is acceptable.

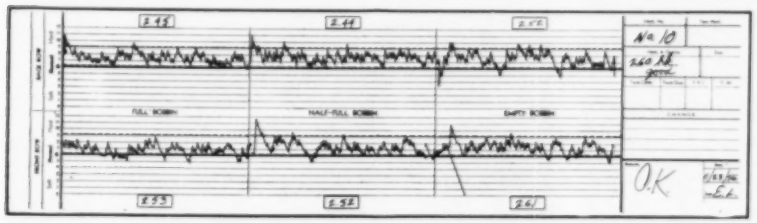


Chart B—
GOOD ROVING is indicated by this pattern, most of which can be covered by the template (dotted lines). Lay gear, twist gear, and tension gear were adjusted to correct faults shown in Chart A.

How Fitchburg Yarn Co. TESTS ROVING

Fitchburg Yarn Co., Fitchburg, Mass., uses two testing instruments to check roving. The combination has improved the uniformity of—

- **Draft**
- **Twist**
- **Tension**

By VICTOR SAXL, Stellamcor, Inc.

Fitchburg Yarn Co., Fitchburg, Mass., has improved roving quality by installing a special roving tester to supplement the work of its Uster evenness tester.

The new instrument, a Resistiro-Rex tester, checks on the uniformity of twist, tension, and draft, while the Uster tester determines linear evenness. There is no direct relation between the findings of the two instruments, but they complement each other.

An analysis of the two readings, weighed against each other, is especially useful in the production of high-draft roving. For example, roving might have an excellent degree of linear evenness and still produce bad yarn because the uniformity of twist or draft is not good. Or the opposite might be true.

Two Bobbins per Frame Are Tested

Fitchburg checks 10 yds. of roving from each test bobbin on the Uster tester and 100 to 150 yds. on the Resistiro-Rex instrument. Uster roving standards (50% scale) are used for both machines. Two bobbins, one from the back row and one from the front row, are checked.

Roving is run through the Resistiro-Rex machine at 16 yds. per min.; and samples from the full, half-full, and nearly empty bobbin are tested. When the bobbin is empty, test lengths are weighed and the actual hank size is entered on a special form on which the test pattern is recorded.

This form has numbered horizontal lines, as illustrated, certain of which are designated as standard. The standard recommended by the manufacturer is Line 6. Fitchburg, because of special conditions, uses as a standard the space between Lines 6 and 7 for roving spun on conventional skewer creels. The space between Lines 11 and 12 is used for roving spun on umbrella creels.

Template Is Placed Over Standard

A template, indicated by the dotted lines on the charts, is placed on the chart over the line or space that is designated as standard. If no more than 10 small points are visible above or below the template, as in Chart B, drafting evenness is correct. Evenness is judged by the height of the curves.

If the chart is marked below the standard, the twist is too soft; if marked above, as in Chart A, the twist is too hard. Chart A also indicates that the roving is stretched by too much tension.

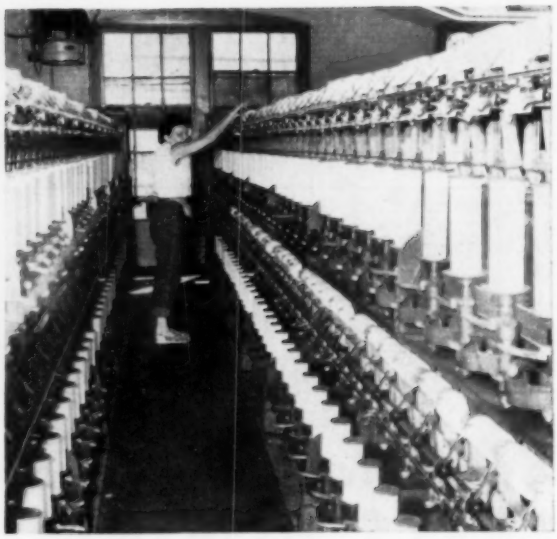
Tension should not vary on bobbins from the front and back rows or from full to empty. If there are variations in the pattern, especially as in the third section of Chart A, tension is too great. There is no point in testing further for evenness until the tension is corrected.

To correct the conditions indicated by Chart A, an actual test case, Fitchburg set the lay gear two teeth closer and the tension gear one tooth softer. After the tension was corrected, the twist gear was reduced by three teeth. Result is the pattern shown in Chart B.

Here are Fitchburg's criteria for good roving:

1. Rovings of the same size should have the same drafting resistance regardless of fiber quality or length.
2. Roving made from long-staple cotton or man-made fiber requires less twist than short-staple fiber.
3. Tension should not vary on bobbins from the front to the back row or from full to empty bobbins. If there are variations in the pattern, tension is too great.

FIRST STAGE in processing Taslan yarn is redrawing. The nylon yarn is wound from the 2-lb. pirns on take-up bobbins for twisting. Care is taken to keep oil and dirt off yarn.



TWISTING is the second operation. Untwisted yarn is difficult to texture; so 13 tpi. are put in 70-den. yarns. Less twist produces rougher yarns.

How Claussner Makes TASLAN YARNS

- Taslan yarns are textured yarns that are finding use in upholstery, draperies, shirts, blouses, and uniforms. They are made by running filament yarns through a jet of air and can be changed by altering the overfeed, twist, air pressure, and yarn construction.
- Here's how the yarns are made at Claussner Hosiery Co.

TASLAN is one of the many textured or bulked yarns that have emerged from the new processes that are modifying yarns made from man-made fibers. End uses found so far for these yarns are varied. They range from draperies, bedspreads, and upholstery to shirts, blouses, uniforms, outerwear, and socks.

Perhaps the biggest characteristic of Taslan is its close resemblance to a staple yarn, although it retains many properties of a filament yarn. Taslan's properties include good cover, subdued luster, soft hand, good strength and evenness; and it does not pill.

Different Yarns Can Be Made

Taslan can be recognized by the many loops that project from the surface of the yarn. These loops are formed by blowing a strong air jet through the yarn. By varying the overfeed of the yarn, yarn denier, yarn twist, and air pressure, many different yarns are produced.

One of the mills to process Taslan yarns is the Throwing Division of Claussner Hosiery Co., Paducah, Ky., which, like other mills processing Taslan, is licensed by E. I. du Pont de Nemours & Co., Inc., originators of the process.

Claussner converted Atwood double-deck uptwisters to produce Taslan yarns. One deck has been eliminated, and there are now 41 spindles on each side of the frame. An air jet is positioned at each spindle.

Selection of the raw yarn is important to acquire the desired effects in the yarn. A better job of texturing is done with yarns that have many filaments. Such yarns are smoother and softer because of the additional filaments to form loops.

Yarns generally textured at Claussner are 70-den. 34-filament and 40-den. 34-filament nylon, although 900-den. yarn has been textured. These yarns are first drawn off 2-lb. pirns onto regular redraw spools.

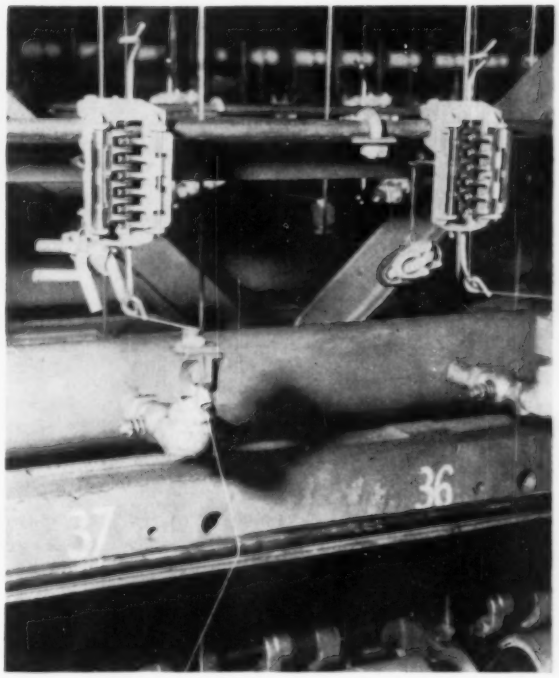
Yarn Is Twisted

These spools are delivered to an uptwister where the yarn is twisted at 12,000 rpm. Twisted yarn has been found to give better results than untwisted yarn, which is difficult to run. Broken filaments do not loop, and untwisted yarn creates excessive wear on the jets.

Lots of twist in the yarn gives a smoother yarn, while low twists give a rougher yarn with longer loops. Seventy-denier nylon is twisted 13 tpi.

Care is taken to keep oil, chalk, and dirt off the yarn during the redraw and twisting operations. Oil prevents

TEXTURING MACHINE has overfeed roll that turns 10% faster than the take-up roll. About 13 grams of tension are placed on 70-den. yarn.



AIR JETS are delicately adjusted in the venturi to control the yarn flow. They are cleaned at each doff. Pressure in the 2½-in. pipe is controlled at 50 psi.-ga.

proper texturing, and chalk and dirt block jets.

After twisting, the yarn is ready for Taslan processing. Metal take-up packages containing the twisted yarn are placed on the lower creel of the textured-yarn machine.

A sheepskin pad under the packages keeps the yarn from falling and plucking under the package. The yarn is run up through a gate tension to the overfeed roll. Tension is controlled to 13 grams on 70-den. yarns.

Overfeed Roll Is 10% Faster

The speed of the overfeed roll in relation to the take-up-roll speed is perhaps the biggest factor that changes the appearance of Taslan yarns. The overfeed roll can turn up to 20% faster than the take-up roll, but the long loops that are made with this setup tend to pick excessively when the yarn is woven into fabric.

A 10% overfeed on 70-den. nylon yarns is used at Claussner. This overfeed changes a 70-den. yarn into a 77-den. yarn. Overfeed changes are rapidly made by changing gears at the end of the frame.

Air jets are arranged over the overfeed rolls and obtain their air supply

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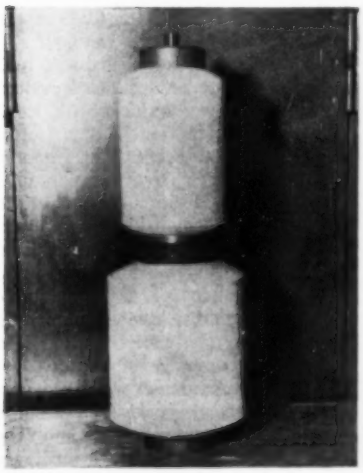


TEXTURED YARN (bottom) is the same weight as the untreated yarn (top).

FINAL OPERATION is winding after the yarns have been set in an oven. Yarn from two Bakelite tubes is wound on one cone. Caps on the tubes help winding.

PATTERNED BEDSPREAD is made in a single operation on one of the newer bedspread tufting machines. The machine tufts 133 bedspreads per 8-hr. shift to increase the variety of patterns possible, lowers manufacturing cost, and raises production.

TUFTED BEDSPREADS—
An Old Home Craft Gives Way to Big Industry

Only a few years ago, 76 small plants produced 80% of all tufted bedspreads. Now eight large companies are supplying over 75% of all spreads —an over-all market of almost $50-million a year. The big-business push comes from—

- **Automatic machines**
- **Organized sales**
- **Specialized styling**

TUFTED BEDSPREADS, only a short time ago a home craft, are now an important part of the textile industry with sales of $49¾-million for the fiscal year ending June 30, 1957, which are the last figures available. Better tufting machines have caught the interest of big-name mills.

Other tufters started small and are now big; one, for instance, is Carolyn Chenilles with big plants and hundreds of machines in Chattanooga, Tenn., and Dalton, Ga.

Now eight mills produce more than 75% of all tufted bedspreads sold. These eight mills center in the Dalton area and include Brooker, Belcraft, Blue Ridge, and Bates Candlewicks as some of the biggest producers.

In contrast with this present big-producer trend, 76 small factories manufactured 80% of all bedspreads only a few years ago.

After a slow year in 1956, tufted-bedspread sales rebounded with a substantial increase (8%) for the first half of 1957 over the January-through-June period of 1956. And because Christmas buying always brings the big end of the sales in the last half of each year, sales for 1957 as a whole should be well above the 1956 figure.

Sales of bedspreads during the last three semiannual periods were:

1st half of 1956—$20,647,000
2nd half of 1956— 27,472,000
1st half of 1957— 22,296,000

With tufted spreads taking a 60% cut of the entire bedspread market, sales are handled much as conventional textile fabrics. Sales agents, many of them in New York, represent the producers.

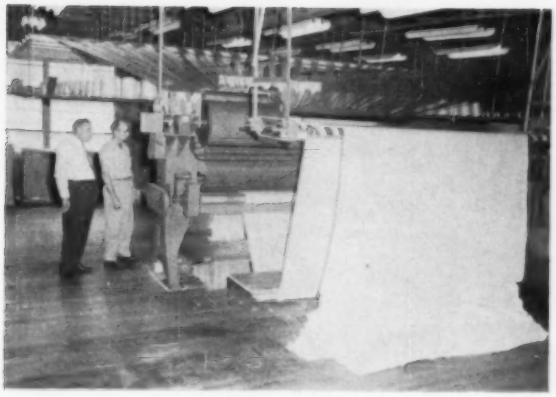
Most of the spreads go to mail-order houses, department stores, and jobbers. In recent mail-order catalogs, for example, 5 pages of tufted spreads were listed in a total of 11 pages of spreads in Sears; Montgomery Ward carried 6 pages of tufted spreads out of a total of 10 pages including woven spreads.

Bedspreads are tufted in seven basic types, including punch work, heirloom, and hobnail. But production centers around only one type of spread, plain tufted, with sales of 50% of the total market.

Along with the new bedspread tufting machines come unlimited pattern possibilities, lower manufacturing cost, and higher production. These factors are adding up to profits that are large enough to attract bigger companies.

Other new developments in tufted bedspreads that favor bigger producers are keener competition in specialized styling, new man-made-fiber yarns with wide ranges of colors, metallic yarns for decorative use, and new rigid standards proposed by the Tufted Textile Manufacturers Association.

Now only companies with large purchasing assets can operate a modern bedspread-tufting mill. Tufters on the inside of the big-business push say that small producers will soon have only 10% of tufted-bedspread sales.



NEW PATTERNED MACHINE that tufts a bedspread completely in a single pass is being observed by Judd C. Brooker, owner, and the machine operator.

PATTERN CYLINDERS for the new machine are changed at design changes. J. E. Harbuck, superintendent, is selecting a cylinder from stored ones.

Making TUFTED BEDSPREADS *With Fast Automatic Machines*

Starting from a $110 investment 20 years ago, this Dalton, Ga., tufter has become one of the eight largest producers of tufted bedspreads. Now, with holdings in three companies, he is further improving his position by—

- **Installing fast automatic machines**
- **Eliminating handwork throughout the plants**
- **Adding new packaging equipment**

BROOKER SPREAD CO., Dalton, Ga., already one of the eight largest producers of tufted bedspreads, is further increasing its output by the addition of a new machine that tufts patterned bedspreads automatically.

The new patterned machine and two other new types of machines recently installed at two other plants directly connected with Brooker are expected to raise production at the three mills from 4¾-million to 5¼-million bedspreads per year.

Twenty years ago, Judd C. Brooker, owner of the company, bought two table-model tufting machines for $55 each and started operations with three employees in a shed in his back yard. Today, in one Brooker plant there are 160 table machines and five wide floor machines in a modern brick building with 45,000 sq. ft. of floor space.

There are 225 employees at present; there were 275 employees four years ago. But in spite of the 18% reduction in the number of employees, production has been increased. Floor machines made the reduction in employees and increased output possible.

Other Textiles Are Used

Brooker Spread Co. is directly connected with two other bedspread manufacturers, Fashion Craft and Bettilee. The company is also connected with a dye plant that finishes the bedspreads. There are a total of 10 floor tufting machines in the three tufting plants.

One new machine makes hobnail patterns. A second new machine is a plain yardage model that tufts 1,740 courses per minute. But the machine that is counted on most for increasing production is a new machine with control of individual tufting ends for unlimited patterns.

Yarn and sheeting for the bedspreads are bought for all three tufting plants, and over-all consumption is 50,000 lbs. of yarn per week and 100,000 yds. of sheeting.

The biggest poundage of yarn used is 8/2 cotton. Other cotton yarns used are 8/4, 8/6, and 8/8. Viscose 8/2 and 8/6 yarns are being used at present on the controlled-needle machine.

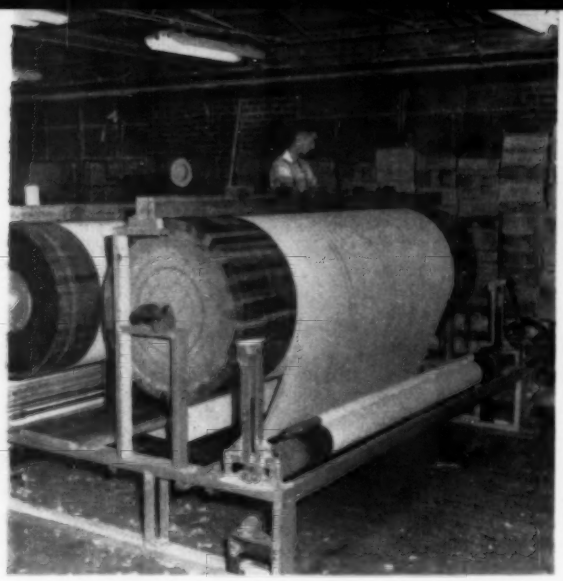
Humidification equipment is not used in tufting because excessive humidity affects cutting adversely on cut-pile bedspreads and also places too much drag on the yarn as it passes through the creel tubing. Yarn bought has a maximum of 7% moisture content.

Sales Are Made by an Agent

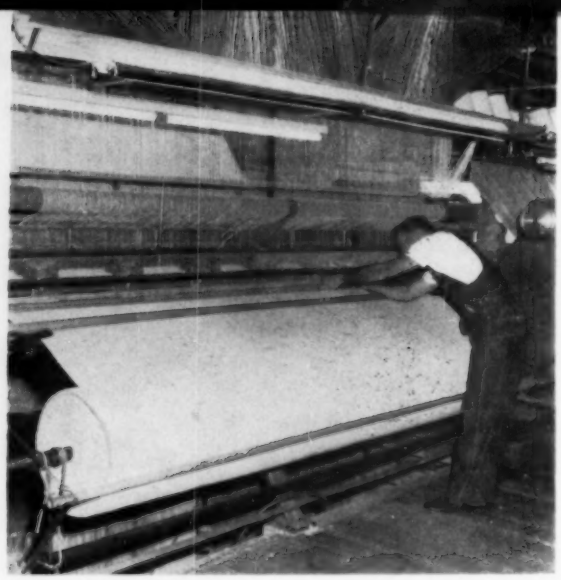
Sales of the bedspreads at Brooker are handled in much the same way that woven fabrics are handled for other mills. The sales representative is A. P. McAuley, New York. Three designers in the New York office are constantly developing new styles of bedspreads. At present, about 100 styles are running in the mill.

Sales are concentrated on mail-order houses, chain stores, department stores, and jobbers.

About 1% of the bedspreads tufted at the mill are graded as second qual-



OLD TUFTING METHOD requires marking the overlay pattern on this wooden drum before tufting begins. This operation is eliminated with the patterned machine.



PLAIN TUFTING MACHINE applies lengthwise rows of tufts over the stenciled pattern in the sheeting backing. The operator is rethreading a needle.

ity. Few seconds are made from the tufting operation itself because defects such as skipped stitches can be repaired. The seconds come from tears and other accidents in the mill and from dye spots and similar defects in finishing. The second-quality bedspreads are sold to customers for "on-sale items."

Finished bedspreads are returned to the mill from the dyehouse for packaging. Most spreads are packed in polyethylene bags. Packaging machinery at present is semiautomatic, but automatic machinery has been ordered.

Old Method

Floor machines at the mill are standard width of 115 ins. They are in two gauges, 3/16 and 3/8 in. The speed of the 3/16-in. gauge is 1,100 courses per minute, and production is 28 spreads per hour.

The 3/8-in-gauge machine runs 1,250 courses per minute and produces 37½ spreads per hour. There are 616 needles in the 3/16-in.-gauge machine and 308 needles in the 3/8-in. gauge.

These machines are run three shifts a day at Brooker. The table machines are run only one shift.

The plain yardage machines produce only lengthwise tufts in the sheeting backing. Although these tufts complete some types of bedspreads, most bedspreads are completed by tufting an additional overlay with the table machines.

For the overlay spreads, the sheeting is marked with a pattern before it is tufted on a plain yardage machine. This marking is an additional operation and is done on a large revolving wooden drum. Rolls of sheeting are run over the drum, and designs are placed on the cloth much as a Mimeograph machine marks paper.

Then the sheeting is tufted on the yardage machines. After this operation, the tufted sheeting goes to a table machine where the overlay is added. Each table machine requires an operator, and machines usually have 6 to 12 needles.

Brooker has 120 table tufting machines and 40 machines for applying fringes and surges.

New Method

The latest machine at the mill is a controlled-needle yardage tufting machine for tufting bedspreads automatically. This machine, made by Cobble Brothers Machinery Co., Inc., does the job of both the plain floor machine and the table-model machine. It also eliminates the pattern-marking operation. All sewing, except fringing, is done in one operation.

With the new machine, the sheeting is fed to the machines from rolls just as it is received from the weaver. The machine is 115 ins. wide and is ⅜-in. gauge. It is running at 490 courses per minute and is producing 16½ bedspreads per hour.

The patterns are made by (1) putting tufts into the sheeting and (2) taking selected needles out of operation to leave the sheeting bare. Therefore the pattern appears as contrasting tufted and untufted areas.

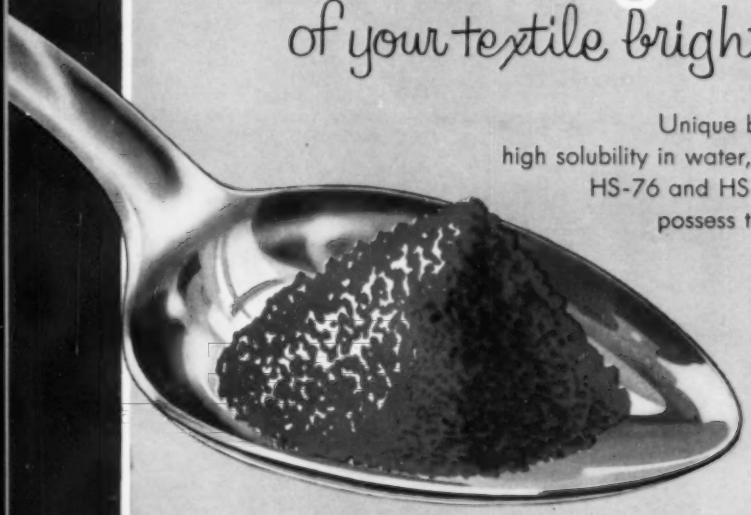
Because each needle in the machine is controlled individually, designs are unlimited. A single design presently being made at Brooker features panels, drops, bolsters, and center motif.

Controls for the pattern are electric, and pattern changes are made in 10 mins.

At the end of each spread, the machine automatically leaves out tufts for any desired length for a cut mark. Standard spreads are 105 ins. long.

BLANCOPHOR HS BRANDS

for the "Easy Solution" of your textile brightening problems...



THE POWDER FORM

BLANCOPHOR HS-71 and HS-76

Unique because of their exceptionally high solubility in water, BLANCOPHOR HS-71, HS-76 and HS-31 optical whitening agents possess these quality features:

- ✶ Recommended for pad or mangle application on cotton and rayon fabrics.
- ✶ Work well alone or together with usual finishing ingredients—resins, starches, fillers, softeners, etc.
- ✶ Produce clear, brilliant whites on bleached textiles.
- ✶ Outstanding in their level dyeing properties.
- ✶ Suitable for use in all types of equipment, such as jigs, reel or package machine.

THE NEW LIQUID FORM

BLANCOPHOR HS-31

BLANCOPHOR HS-31, the new liquid form, is easy to use—there's no need to dissolve powders.

Write today for more detailed information on the application of liquid form Blancophor HS-31 and powder forms, Blancophor HS-71 and HS-76.

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Blancophor HS-71, HS-76 and HS-31 manufactured by General Aniline & Film Corporation are sold outside the United States under the trade names, respectively, Tintofen DP, Tintofen D and Tintofen DP Liquid.

Which fabric has the RHOPLEX backing?

Even 40 hours in a Fade-O-meter couldn't discolor or stiffen the backing of the automotive upholstery fabric sample at left. It's made with RHOPLEX resin! But the latex backing on the other sample became badly discolored and brittle after the same exposure to heat and light.

That's why RHOPLEX backing resins are being used more and more on automotive and furniture upholstery, carpets, and non-woven fabrics. The acrylic film not only resists aging, but also provides excellent bonding and curbs unraveling. And unlike latex, RHOPLEX backings need no curing.
Write today to learn how RHOPLEX backings can improve your fabrics.

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This Month in . . .
TEXTILE CHEMICALS

New Print-Color Resins—

Phosphorous-bearing resins developed by Imperial Chemical Industries Ltd. show considerable promise as superior binding agents for colors and pigments used on plastics and man-made-fiber fabrics.

Called Phoryl resins, the products have good adhesive properties on polyamide and polyester fibers, as well as polyethylene. Once the color has been applied, the resins can be washed out, leaving the dyes imbedded in the fiber or plastic surface.

New Fiber-Dyeing Method—

A method of dyeing cellulosic fibers continuously with the new reactive dyes has been developed by a British-German combine.

The fiber is fed in a thin lap through nip rolls into the vessel containing the reactive dye. A suction principle is used to pull the liquor through the lap and maintain the continuity of the fibers. The lap is in contact with the liquor 15 secs. and is then lifted from the dye vat mechanically and delivered to a hopper, from which it is conveyed to a pair of squeeze rolls.

In the next step, the lap is put through a wet opener that opens up and thickens the web and delivers it to a suction-drum dryer.

The dyed fiber may be dried immediately or only partially dried with steam before delivery from the dryer. In either case, it is necessary to raise the fiber temperature to 100° C. for at least 30 secs. to bring about the necessary chemical reaction between the dye and the fiber.

The dyed fiber can be spun with the residual alkali from the dye solution left in, provided a scouring process is to take place at a later stage of manufacture.

If free sodium carbonate is undesirable in later processing, the lap is washed by passing it through the range again with fresh warm water in the dye box.

Fibers larger than 8 den. require a layover period between squeezing out and drying. This period can be provided for by a second hopper and conveyor that carry enough fiber to permit a 15-min. layover between extraction and drying.

New Finish for Woolens—

The wash-and-wear finish for woolens developed by the Commonwealth Scientific and Industrial Organization is composed of 1% thioglycollic

acid, 1% ammonia (sp. gr. 0.88), and 0.1 to 0.2% of a wetting agent. The strength of the solution may be increased to 2% thioglycollic acid and 2% ammonia for use on heavy fabrics.

The solution is applied to pressed garments along the areas in which creases are wanted, and then the garments are re-pressed. Fabrics may also be treated before being manufactured into garments.

Pleats are produced by laying up the fabric in white-paper patterns, spraying on the solution, and then steaming the goods for 20 to 40 mins. at atmospheric pressure or 3 to 5 mins. at 5 to 10 psi. pressure.

Spraying should be carried out in a well-ventilated area equipped with an exhaust fan. Metal containers for the solutions should be avoided, and the spray guns should be of all-plastic construction.

Full details of the process are available from the Officer-In-Charge, Wool Textile Research Laboratories, C.S.I.R.O., Box 21, Belmont, Geelong, Victoria, Australia.

New Mildewproof Method—

A process that makes canvas or other cellulosic-fiber materials actually proof against mildew and many other forms of fungus and bacteria has been developing by Ohio Falls, Inc., Louisville, Ky. The firm applies the finish to either gray or bleached fabrics. No color or odor is added to the goods by the process, and permanent protection to the fabric is obtained.

Better Degreasing Process—

Improvements in solvent degreasing of wool are paying off in a better grade of lanolin, according to the Wool Textile Research Laboratories, Australia.

The flotation recovery process and methods to purify the lanolin it yields have been improved considerably. The better price obtainable for the purer lanolin makes solvent degreasing more attractive to wool processors.

Waste-Treatment Ideas Upset—

Sanitary engineers have long held that highly alkaline mill wastes could not be successfully treated by biological oxidation without prior neutralization.

This theory has been pretty well upset by the results of studies made in several different waste-treatment plants.

The most recent report on these findings comes from Dr. Nelson L. Nemerow, associate professor, civil engineering, at North Carolina State College, Raleigh, N. C. He served as chairman of the committee on sanitary engineering research of the American Society of Engineers, which conducted the research.

Data accumulated from studies of the Gastonia, N. C., city sewage-treatment plant, the results of Cone Mills' extensive work on treatment of mixtures of sewage and mill waste, and pilot-plant studies at Pacific Mills' Lyman plant, brought out the following facts:

—At Gastonia, despite a pH of 9.5 17% of the time, the activated-sludge system working on mill waste and sewage mixtures reduced B.O.D. demand from 70 to 90%.

—Cone Mills' pilot plant, employing trickle filters and activated sludge on mill waste and sewage mixtures, got up to 90% reduction in B.O.D. demand at pH 10.5.

—Lyman's combination of holding tanks, aeration basins, and final settling basins produced 90% B.O.D. reduction on mill wastes at pH 11.

Although the efficiency of biochemical treatment tends to drop as pH increases, the bacteria can be acclimated to work at pH values once thought to be completely impractical. Hydroxide alkalinity rather than high pH appears to be the controlling factor in successful treatment of mill wastes.

Did You Know . . .

. . . **that aftermercerization of resin-treated cottons** will double abrasion resistance and increase tensile strength up to 20%?

In a recent report from the Southern Utilization and Research Div. of the U. S. Dept. of Agriculture, optimum conditions for the treatment were found to be resin content 6 to 10%, alkali concentration 20%, mercerization time 5 to 20 mins.

To keep the fabrics under tension for such extended periods of time would be impractical in conventional mercerizing equipment, but the experimental work may prove to be a stepping stone to overcoming the inherent weaknesses of resin-finished cottons.

•

. . . **that many factors other than sunlight** or the light produced by the Fade-Ometer affect the fading of dyed samples? The moisture content of the goods, finishing materials, temperature during the exposure period, and even the backing upon which the sample is mounted have their effect on the rate and extent of fading, Henry E. Millson reported to the Northern New England section of AATCC in the interest of developing better lightfastness tests.

The myth that sunlight below a certain threshold of radiation intensity has little effect on fading was exploded by the exhibition of samples that had been exposed for 90 and 180 hrs. in the shade.

A lightfastness test in which all the factors that affect fading are taken into account and allowed for is needed in order to get reproducible results in all parts of the country at all times, Mr. Millson said.

This Month in . . .
TEXTILE CHEMICALS

NEW DYES AND CHEMICALS

Titanium Stripper

Wilstrip . . . produces controlled color-stripping effects by varying the quantity used or by raising the temperature of the bath. The product is supplied in liquid form and can be used on natural or man-made fibers. A. L. Wilson Chemical Co., Kearney, N. J.

Circle D-1 on Reader-Service Card

Vat Dye

Copper Red R Paste . . . produces brick-red shades on cellulosic fabrics that have excellent fastness to weathering as well as good fastness to light, washing, bleaching, crocking, and water-spotting. Application by all the usual vat-dyeing methods is possible, either as a self shade or for producing tertiary shades. Ciba Co., Inc., Box 25, Village Station, New York 14, N. Y.

Circle D-2 on Reader-Service Card

Direct Dye

Lumicrease/Cuprofix Gray 3LR Pat . . . dyes cellulosic fibers gray shades that are fast to light, water, and perspiration. The dye is very soluble and gives satisfactory unions on cotton-rayon mixtures. It is suggested for automotive and decorative fabrics. Sandoz, Inc., 61-63 Van Dam St., New York 13, N. Y.

Circle D-3 on Reader-Service Card

Print-Paste Thickener

Protakyp K . . . works well in alkaline printing pastes to give pastes of uniform viscosity. The product is an alginate and may be used alone or with starch or British gum. Croda, Inc., 15 E. 26th St., New York, N. Y.

Circle D-4 on Reader-Service Card

Basic Dye

Maxilon Blue RLA . . . recommended for acrylic fibers, produces slightly reddish shades of blue that build up well and have exceptional lightfastness. For level dyeings, an anionic retarding agent such as Irgasol DA is suggested. The dye has maximum fastness ratings to washing at 160° F., fulling, perspiration, dry-cleaning, carbonizing, decatizing, chlorine, crocking, sea water, and pressing. Geigy Dyestuffs, Div. of Geigy Chemical Corp., Ardsley, N. Y.

Circle D-5 on Reader-Service Card

Wool-Dyeing Assistant

Celersel . . . increases the rate of absorption of dyestuff in wool fiber at lower temperatures than are commonly used for the dyeing process. The product also decreases the time necessary to produce full shades. The combination of lower temperatures and shorter working periods is claimed to produce softer, loftier fabrics. Metro-Atlantic, Inc., 1210 New Buncombe Rd., Greenville, S. C.

Circle D-6 on Reader-Service Card

Vat Dye

Sandothrene Copper Red NR Double Paste Ultrasperse . . . provides bright copper reds by all vat-dyeing procedures. The shades possess very good all-round fastness, particularly to peroxide bleaching. Sandoz, Inc., 61-63 Van Dam St., New York 13, N. Y.

Circle D-7 on Reader-Service Card

Nylon Finishes

Conco Non-Slip #10 . . . produces a nonslip finish on woven nylon fabrics without adding any stiffness or firmness to the hand.

Circle D-8 on Reader-Service Card

Conco Weighter WN . . . adds substantial weight and body to woven or knitted nylon fabrics without stiffening the hand. Continental Chemical Co., 195 21st Ave., Paterson, N. J.

Circle D-9 on Reader-Service Card

Spotting Compound

Laurel Spotter AF-2 . . . removes oil and grease spots from all types of fabric. The product is 100% emulsifiable and is readily removed in scouring and boiling-off operations. Laurel Soap Mfg. Co., Inc., Tioga, Thompson, & Almond Sts., Philadelphia 34, Pa.

Circle D-10 on Reader-Service Card

Scouring Agent

Isomul Extra . . . suggested as a scouring agent for man-made or natural fibers. The product is soluble in water or petroleum solvents and operates in nonionic, anionic, or cationic systems. It is stable to acids, alkalis, and metallic salts and effectively removes oil and tar spots. Isochem Corp., 221 Oak St., Providence 9, R. I.

Circle D-11 on Reader-Service Card

Basic Color

Maxilon Red Bl . . . produces bright red shades with a blue cast on acrylic fibers. The dye has excellent lightfastness at all depths of shade and very good fastness to most finishing operations. Wool and cellulosic fibers are well reserved. High-temperature dyeing methods are suggested for application. Geigy Dyestuffs, Div. of Geigy Chemical Corp., Ardsley, N. Y.

Circle D-12 on Reader-Service Card

Softener

Hartex Softener DW . . . a 100%-active liquid cationic softener recommended for cellulosic or man-made-fiber fabrics, has high resistance to yellowing and produces a soft, pliable hand by exhaustion methods or by padding along with resins.

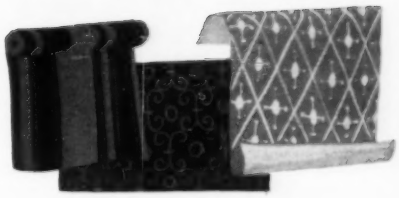
Circle D-13 on Reader-Service Card

Softyne Special . . . a nonionic softener supplied in paste form, imparts a soft hand on all types of textile materials. Does not change the shade and is highly resistant to yellowing. Hart Products Corp., 1440 Broadway, New York, N. Y.

Circle D-14 on Reader-Service Card

TEXTILE COATINGS FROM DOW

For a better product at less cost try a Dow Latex

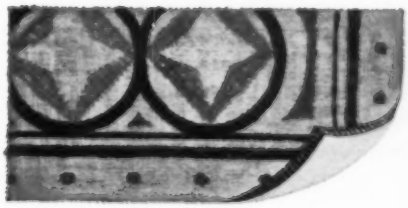


FOR FABRIC WALL COVERINGS

Coating with Dow Latexes effects excellent register, resulting in portrait quality, printability and embossability. Resistance to pastes, to soaps and other cleansers . . . excellent aging properties . . . all make the use of Dow Latexes even more desirable. Plan, too, for cost reductions!

FOR RUBBERIZED HAIR PADS

Blends of Dow Latexes with natural rubber or other binders tailor hair pads to fit every upholstery and packaging use. These latexes permit control of modulus . . . improve tensile strength and other properties . . . and effect savings in raw material costs.

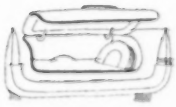


FOR RUG BACKING

There is a Dow Latex to meet every formulating requirement. Sizes made with these latexes display a complete range of properties suitable for both woven and tufted products. Add hand, longer life and flexibility on aging with a Dow Latex.

WINDOW SHADES

DOOR PANELS



TRUNK LINERS

FABRICS

Dow Latexes are making important product improvements in these and other textile applications. Dow Coatings Technical Service is ready to help you solve your coating problems. Just drop a line to THE DOW CHEMICAL COMPANY, Midland, Michigan, Coatings Sales Dept. 2113B.

LATEX T.M.

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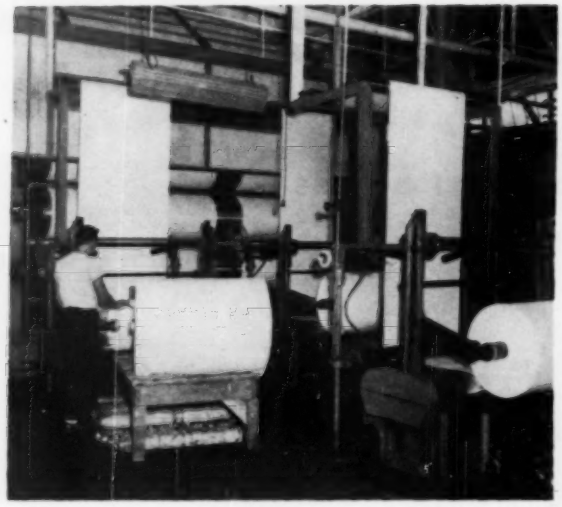
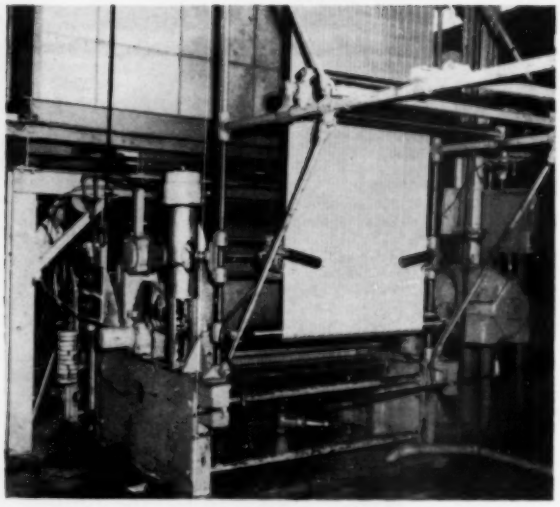


MODERN HIGH-SPEED CANS keep ahead of bleaching production by turning out a total of 600 yds. per min. of average-weight goods such as 80-square print cloth.



FINISHING RANGES (there are seven in all) are the latest type. Heavy air-set pads and predryers help tenters produce at 125 to 150 yds. per min.

How Southern Bleachery Produces Fine COTTON PRINTS

Southern Bleachery and Print Works, Inc., Taylors, S. C., combines an excellent plant with know-how to come up with an efficient operation in the highly competitive business of dyeing, printing, and finishing cotton fabrics. Emphasis is placed on—

- **Good preparation**
- **Faithful color and design reproduction**
- **Modern chemical finishes**

COMBINING PRODUCTION WITH TOP QUALITY isn't so hard if you have the plant and personnel to do it. Southern Bleachery's commission dyeing and printing operation has them and believes in using them on better-grade cottons as far as possible.

Working directly from the customer's designs, the plant makes the sketches and engraves the great majority of rollers that are used in producing its prints. This is a vital control point where the prime factors of pattern fit, accuracy of reproduction, and delineation can be kept to the necessary standards.

Fabric preparation is no less thorough. The plant lays out goods in the gray room and first puts them through gas-fired singers coupled with a desizing pad, which acts as a quench box and soaks the goods in a starch digestant. From the desizing pad, the cloth is pulled into steeping bins and let lay for 3 to 6 hrs.

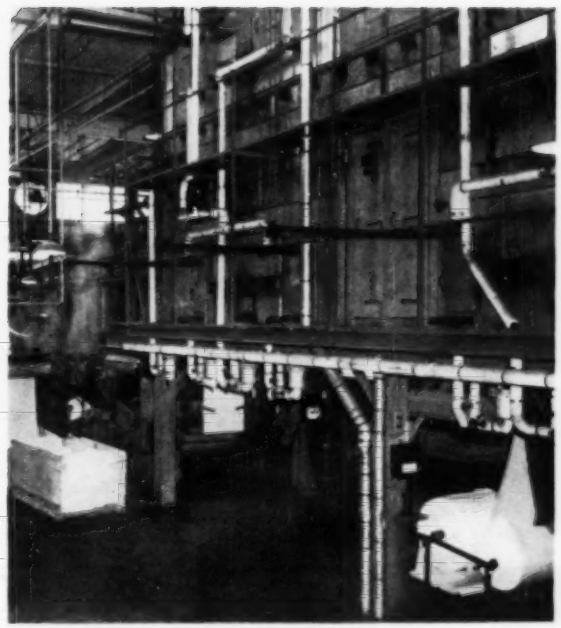
Then the goods are hauled out through log washers into a saturator carrying a weak solution of sulfuric acid. The goods are squeezed out and hauled through two log washers to wash out the acid and residual impurities put into solution by the souring process.

The goods are then piled in the kier by automatic pilers and are saturated with the solution in which they will be boiled. A typical kier formula for a major item such as 80-square print cloth includes 3% caustic soda, ½% of a kier assistant that aids penetration, and ⅛ to ¼% of a chelating agent to take care of iron and other water contaminants.

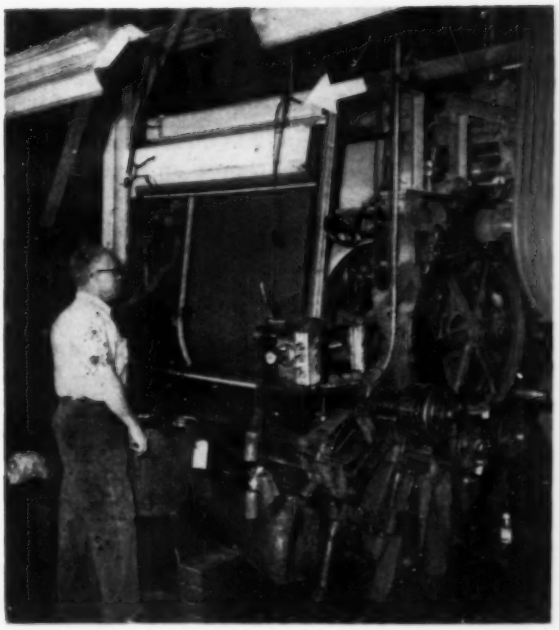
Kiers Are Good Producers

The kiers are brought up to 12 to 15 lbs. steam pressure, and the load is boiled 8 to 10 hrs.

Southern's 20 kiers keep the dyeing and printing departments supplied with well-bottomed fabrics. Long the backbone of good cotton preparation, kiers are still much in the running in cotton bleacheries. A five-ton kier, efficiently managed, will produce up to 60,000 yds. of 4.00-yd. fabric per day, or about 40 yds. per min.



THREE DYEING RANGES give the plant flexibility. Goods are pigment-padded, dried, delivered into the reducing pad, steamed, oxidized, soaped, and dried in one run.



MULTICOLOR PRINTING MACHINE is typical of the machines at the plant. Ultraviolet light from fixture (arrow) helps printers detect fit on certain colors not visible in normal light at this stage.

Like most modern bleacheries, Southern makes its own sodium hypochlorite solutions for bleaching. Chlorine gas is bubbled into a reservoir charged with caustic soda, which absorbs the chlorine and gives a finished product analyzing 5% available chlorine.

This stock chlorine solution is diluted to a strength of 0.1 to 0.6% available chlorine before it is used on the goods. Kier-boiled goods are washed and then are led into the chlorine saturator, squeezed out, and piled into bins, where the bleaching action is completed in 1 to 1¼ hrs.

The final step in preparation is to haul the fabric through washers and then into the white-sour saturator, where traces of remaining hypochlorite are neutralized by SO_2 gas dissolved in water. SO_2 is a safe antichlor, easily handled, and leaves no harmful residues in the fabric.

Primary Drying Is Efficient

Southern Bleachery's primary dryer is a stack of stainless-steel cans that can handle three strands of print goods at 200 yds. per min. for a total production of 600 yds. per min. The fabric is wound on rolls on Simpson batchers that permit continuous operation.

If the goods are to be mercerized, they are treated before drying in a range made up of a water mangle, the caustic saturator, and a 60-ft. tenter. Residual caustic is washed out in wash boxes coupled to the mercerizing range.

Fast Colors Feature Prints

A very high proportion of Southern's production is printed goods decorated with vat colors, naphthols, aniline black, and pigment colors.

Vat colors are printed by means of various formulas; but basically the print paste is made up of vat pigment, British gum, an alkali, and sodium hydrosulfite. The goods go from the print machine over drying cans and are plaited down in trucks.

Vat shades are then put through a steam ager that converts the vat pigment into soluble form and fixes it on the goods.

After ageing, the prints are oxidized and soaped.

The production of resin finishes at the plant has grown proportionately with the over-all demand for durable finishes.

Cyclic urea and melamine resins are most used. The finishing ranges are set up to apply and dry the finishes at high speed.

Curing is done as a separate operation, primarily because it affords greater flexibility in the use of the several main finishing ranges. Goods are put through the curing unit at a temperature of 300 to 350° F. The exposure time will vary with the goods and the resin formulation; usually it is 1 to 3 mins.

At this state, the goods are ready for the finishing touches of compressive shrinking and/or calendering. The plant is equipped to produce plain, chased, or friction-calendered effects as required by the customer. Many lines require the compressive-shrinkage treatment, which stabilizes fabrics to within 1%.

A Clean Plant Equals Clean Goods

Southern is rightly proud of the fact that the plant is kept clean and well painted at all times. Management feels that there is a very tangible benefit in cleanliness where goods are being processed and that there is an added bonus arising from the fact that people who work in clean surroundings are more conscious of cleanliness applied to their jobs.

Another important factor in this successful operation is the result of a recent modernization program [TEXTILE WORLD, June, '57, p. 120]. Within the past three years, new dyeing, drying, soaping, and finishing equipment has been added and materials handling simplified and improved. The combination of know-how and modern equipment keeps Southern Bleachery and Print Works busy.

The Plus "Ingredient" That Makes A Difference

You will find no secret additive in Victor Mill Starch as a claim for superiority. Dependable uniformity, attained through quality controls, has been responsible for the growing preference for Victor Mill over the years.

But there is one intangible element important to you. That is the group experience and technical knowledge of Keever sales-service men.

Mill problems are thoroughly discussed in staff meetings. The combined contact and study of more than 120 years is backed by a team of textile engineers, chemists and technicians to offer you our most valuable stock in trade--Keever service.

Charles C. Switzer, Vice President
TEXTILE SALES DIVISION
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the weaver's friend

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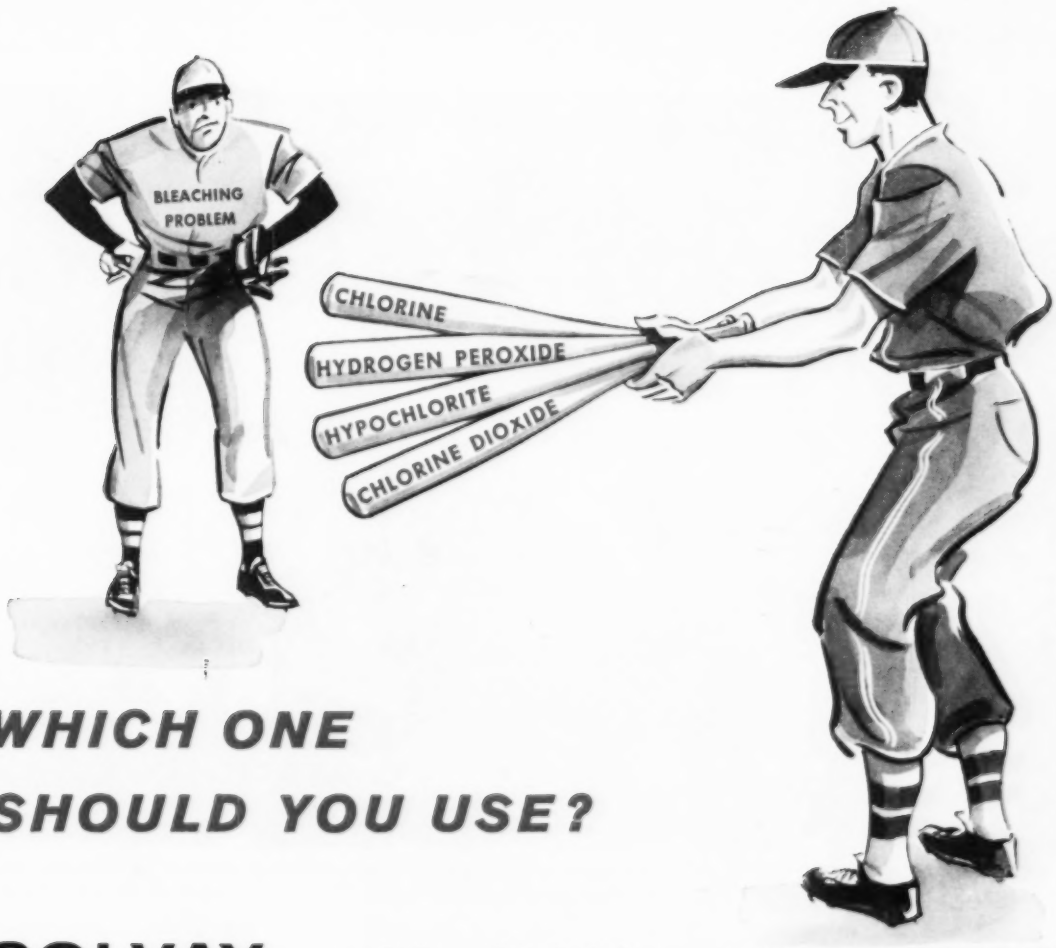

WHICH ONE SHOULD YOU USE?

SOLVAY – with all 4 bleaching methods – can help you make the best choice

SOLVAY—the one producer offering all four bleaching methods—can give you objective guidance in choosing the method or methods best suited to your needs.

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WOOL blended for carpet yarns is loaded in 600-lb. lots in this kettle. A preliminary wetting out starts the operation.

How Roxbury Dyes CARPET WOOLS

Roxbury Carpet Co., Saxonville, Mass., dyes many types of wool in stock or package form. Backed by a 100-year heritage of continuous operation, the plant uses modern machinery and methods to produce up to—

- **125,000 lbs. per week of stock-dyed wools**
- **75,000 lbs. per week of package-dyed yarn**

PRODUCING UP TO 200,000 LBS. PER WEEK OF STOCK- AND YARN-DYED WOOLS takes coordination in planning between departments as well as good equipment and skill.

Roxbury Carpet Co.'s dyeing operation is laid out in two departments adjacent to each other and close to the receiving and blending departments.

The wools best suited to carpets are the coarser, more-resilient types. Roxbury imports wools from India, the Middle East, Ireland, South America, and New Zealand and blends them to produce the type of yarn necessary to make a long-wearing, resilient pile, carpets.

The Saxonville plant produces axminster and velvet-weave carpets. The recent acquisition by Roxbury of the M. J. Whittall Associates plant in Worcester rounds out the line with wilton carpets made on velvet looms with jacquard heads. Tufted carpets, which are in growing demand, are made by Roxbury Southern's Division at Chattanooga, Tenn.

How Stock Is Dyed

The blended stock is loaded into 600-lb. stainless-steel kettles, and the bath is charged with a small percentage of a synthetic detergent and Glauber's salt. The kettle is closed and the temperature brought to 120° F.; then acid dyes are added.

The dyebath is brought to the boil in 45 mins., and a sample is taken to check shade. From this point on, 2% sulfuric or formic acid is added, depending on the dyes used, to exhaust the color and build up the shade to the desired point. Most repeat dyeings require no further color adds, but occasionally more acid is added to get a better exhaust.

Wiltons Are Mothproofed

The wools used at the Whittall Division plant in Worcester are durably mothproofed as a regular feature of the line of wilton carpetings.

Roxbury's dyehouse uses Mitin, a Geigy Chemical Corp. product, to mothproof the wool. The usual method of application is to add 2 to 2½% owg. of Mitin to the dyebath as a preliminary step. After a short circulation period, the dyes and other assistants are added and the temperature raised to the usual dyeing temperature. Mitin combines permanently with the wool in a manner similar to the dyestuffs and provides permanent protection against moth damage.

How Packages Are Dyed

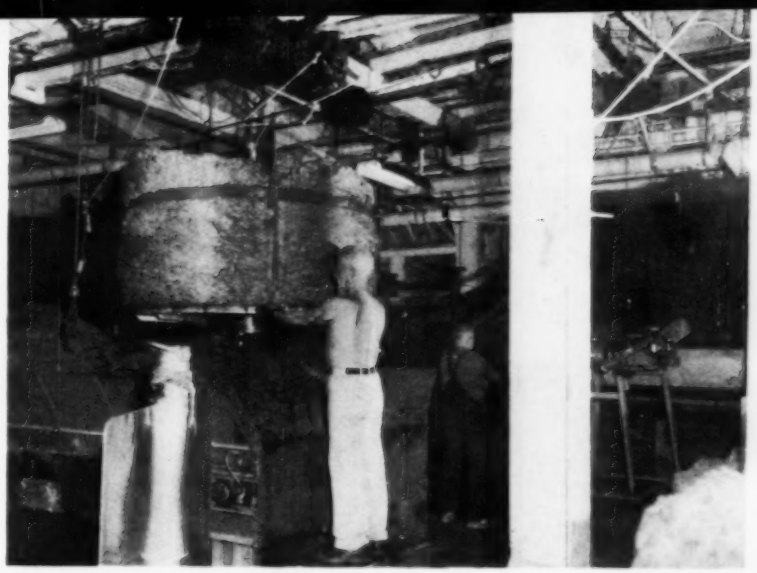
For many purposes, Roxbury uses package-dyed yarns. The plant is equipped with an assortment of stainless-steel package-dyeing machines ranging from small 48-package units to three 1,216-package machines. Modern automatic temperature and cycling controls help to take the guesswork out of dyeing.

A typical routine in package dyeing wool yarns start with scouring the load for 20 mins. at 140° F in ¼ to ½% of a synthetic detergent, following which the bath is dropped.

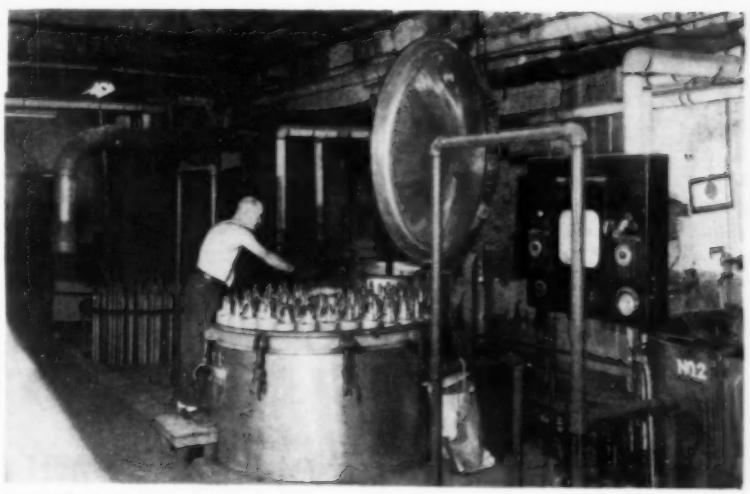
If the yarn is to be mothproofed, 2 to 2½% owg. of Mitin is added to a fresh bath and circulated well. Then formic acid, Glauber's salt, and color are added and the bath brought to 200° F. At this point, 2% owg. or more of sulfuric acid may be added, depending on the shade and the colors involved. The bath is kept at 200° F. for an hour, and then a sample is taken from the sampling cell mounted on the machine cover.

From this point on, color, acid, or both may be added through the expansion tank until the shade is matched.

The dyebath is then dropped, and the yarn is extracted and dried.

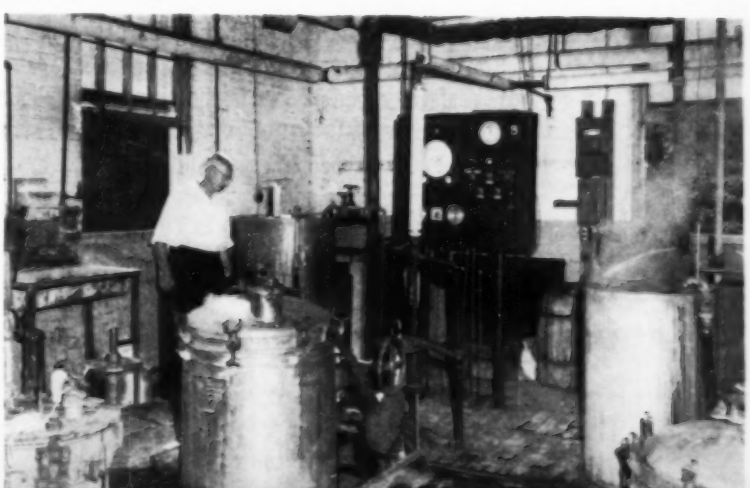


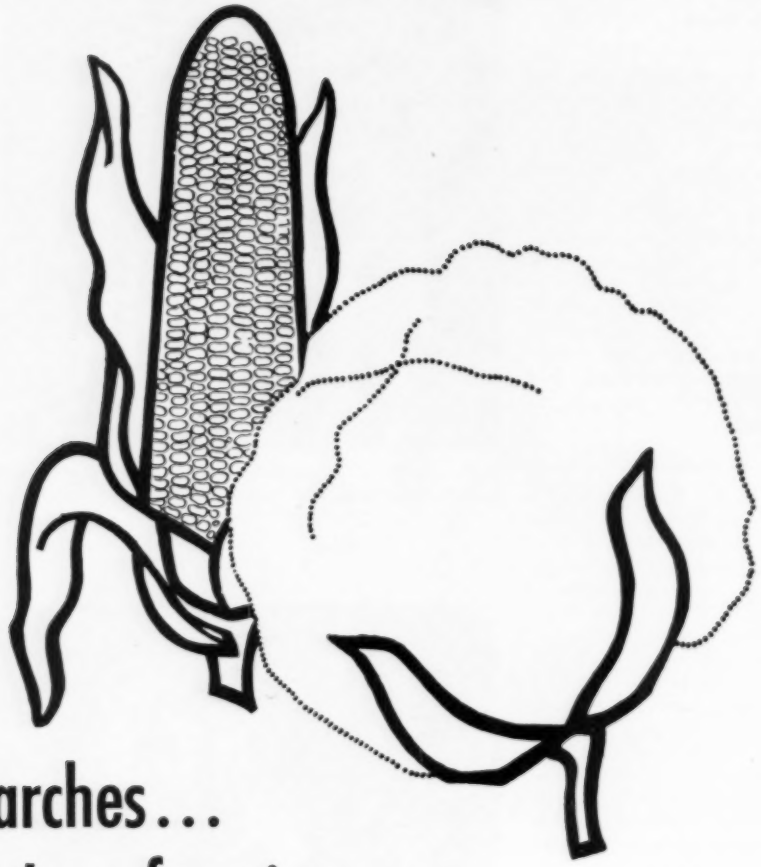
DYED WOOL STOCK has been lifted from the dyeing machine and transported to the conveyor that feeds the stock dryer (rear).



PACKAGE-DYED WOOL is ready here to be lifted out and taken to the extracting and drying operations nearby.

SMALLER PACKAGE-DYEING UNITS are looked over by Joseph Fleming, assistant foreman of dyeing.





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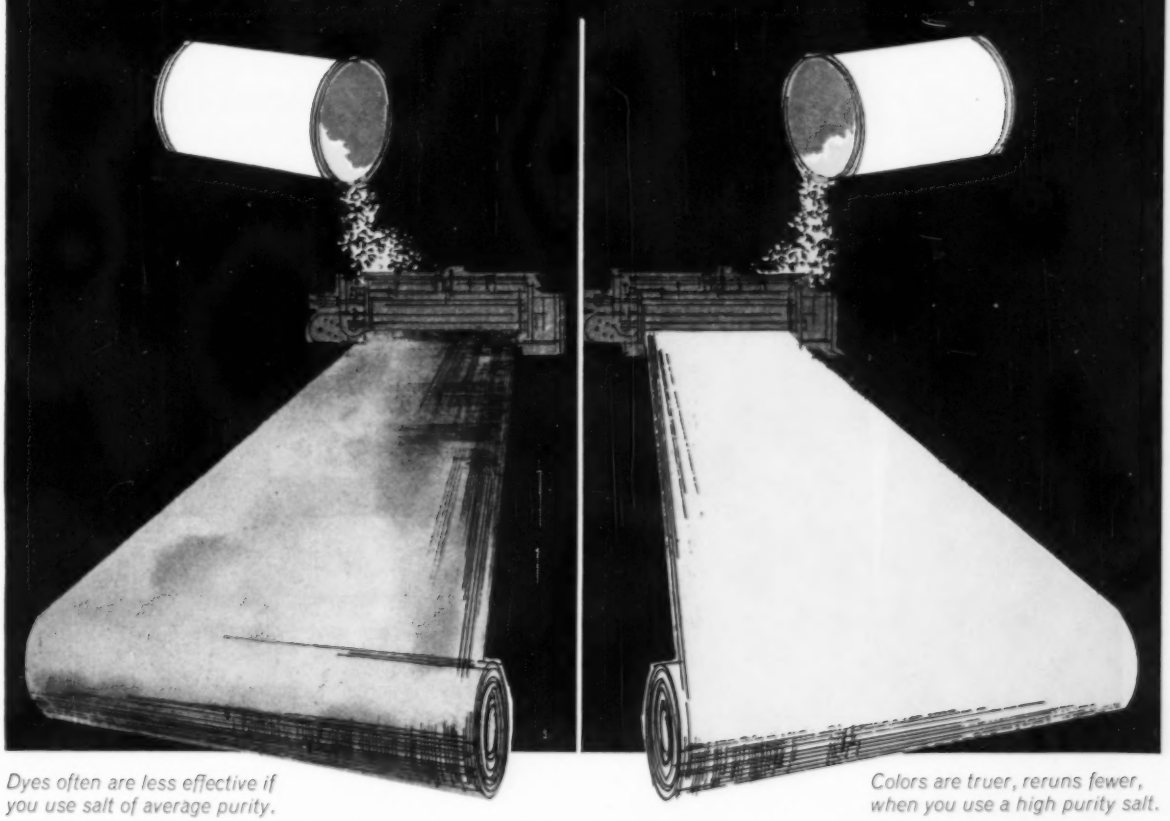

Dyes often are less effective if you use salt of average purity.

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Available in 100-lb. bags or bulk, Chemical Grade 999 is recommended for use **whenever commercial calcium-free salt is required.** It's specifically recommended when direct salting is used in dyeing rawstock, package, beam, beck or jig with either sulphur, direct, or naphthol dyes.

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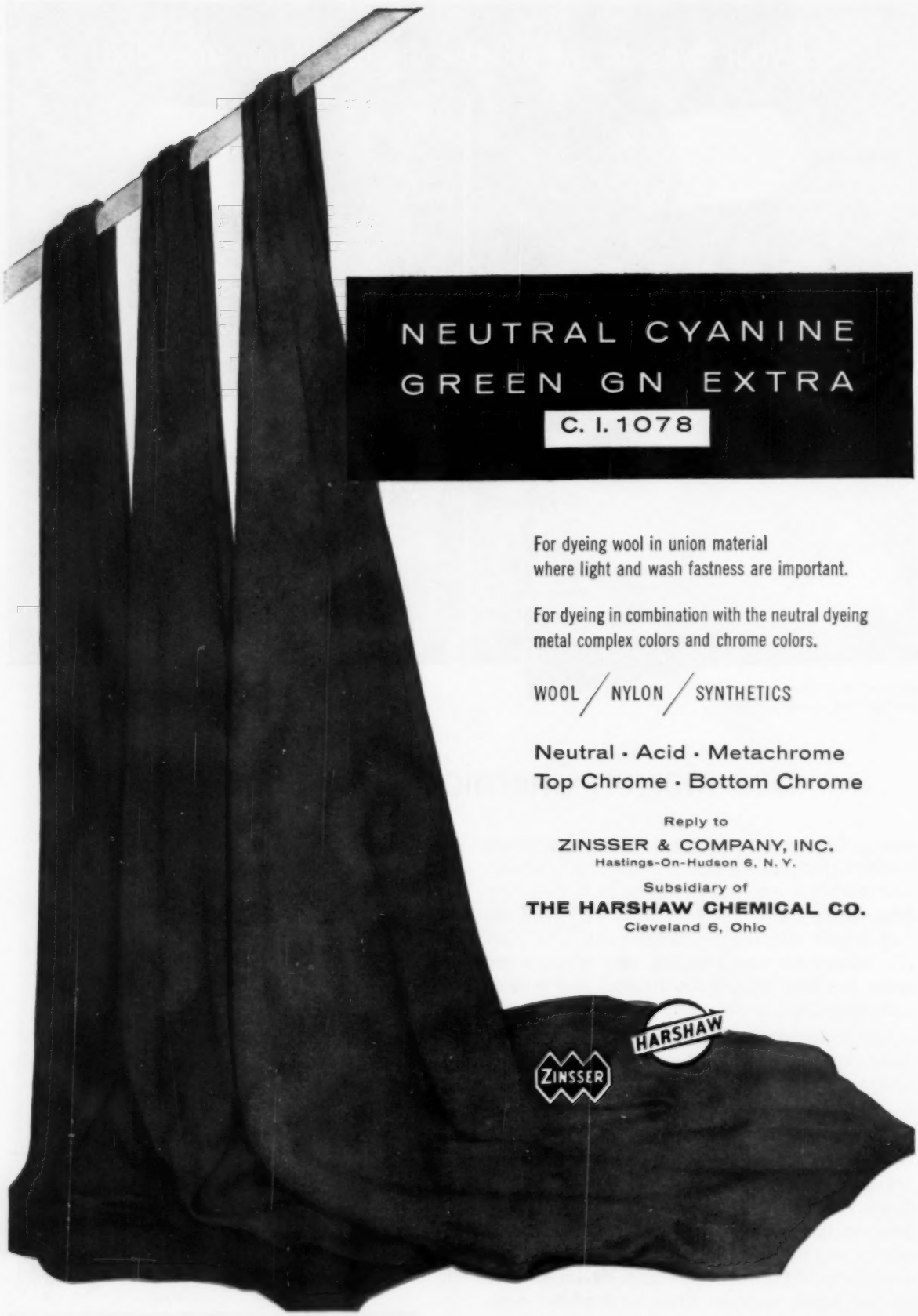

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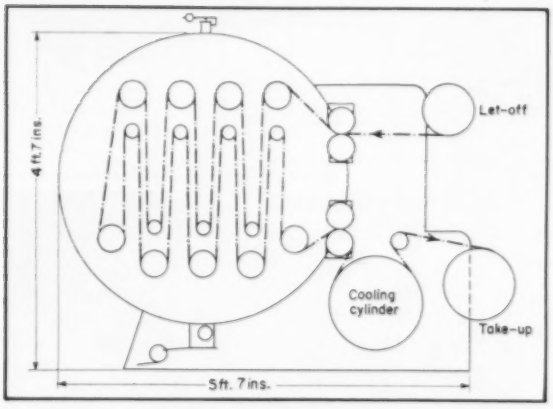
How To SET NYLON TRICOT By Continuous Steaming

- One of the most troublesome details in finishing nylon tricot has been the setting operation
- Here's a rundown on early and current methods of heat-setting and results of new developments in using saturated steam

By FRANZ FOURNE



CONTINUOUS STEAMING of nylon tricots under 25 to 30 psi. pressure is possible in this European machine now in operation. Lower cylinder is used to cool the steamed goods.

A REVERSION to the original method of setting nylon-tricot fabrics with saturated steam—minus the serious disadvantages of batch processing—has been worked out in Europe.

Saturated steam at 25 to 30 psi. was the original medium used to obtain dimensional stability in nylon-tricot fabrics. The goods were carefully wound on perforated cylinders and run into a pressure chamber; and steam was introduced through the cylinder until pressure built up to the desired point, usually 25 to 30 lbs.

The results left much to be desired. No matter how the goods were wound, the outer layers invariably set at 6 to 10 ins. narrower than the innermost layers.

Contraction of the fabric produced considerable pressure on the inside layers and created a serious moiré problem. However, the fabrics were not yellowed and retained a soft hand.

These advantages were offset by the width variation and moiré; so the next step was to set the fabrics continuously on a pin tenter by means of dry heat supplied in most cases by high-resistance elements.

Good dimensional stability is produced by this method, but it is tricky. It is easy to overheat and yellow the fabric with dry heat, and the hand is somewhat impaired. Furthermore, stoppages in the tenter generally produce areas that dye differently from the balance of the piece in spite of automatic current cutoffs, cold-air blasts, and other safeguards.

A German machine manufacturer has come up with a way to steam nylon-tricot fabrics continuously under the usual pressures of 25 to 30 psi. The arrangement shown in the sketch is set up as a batch method, but the goods can as easily be fed from a truck and plaited down in a truck if strictly continuous operation is wanted.

The accompanying table showing the performance characteristics of the method indicates that the principle is sound and that production possibilities are adequate.

Setting Method

Nylon fabric 40 grams per sq. yd.	Hot air, cylinder, or infrared heat	Saturated steam: Intermittent autoclaves	Saturated steam: Continuous operation
Residual shrinkage (%)			
Warpwise	2 to 3	0	0
Fillingwise	0 to 1	0	0
Angle of recovery (1 hr.)	155°	165 to 170°	170 to 174°
Fabric width (raw = 100 ins.)			
Start of piece	90 ins.	98 ins.	88 ins.
End of piece	90 ins.	86 ins.	88 ins.
Strength in relation to raw strength	80 to 85%	95 to 100%	100%
Dyeing properties	Uniform	Slight difference between outside and inside	Uniform
Appearance	Good	Moiréed	Good
Fixing temperature	428° F	262° F.	266° F.
Fixing time	10 secs.	20 mins.	1 min.
Output of one machine in an 8-hr. shift (yds.)	7,000 to 10,000	3,000	5,000 to 7,000

PERFORMANCE CHARACTERISTICS of the continuous-steaming method are given above. Production is somewhat less than by current methods, but investment in equipment is said to be considerably less.

Using Salt Efficiently

by INTERNATIONAL SALT COMPANY, INC.

Hydraulic Handling—Quick, Economical Way to Move Salt into Storage

Here's a new, effective method for moving salt from delivery cars or trucks into plant storage, without disrupting other operations. Hydraulic Handling systems, already in operation in several plants, have eliminated the expense of mechanical unloading equipment, and cut down considerably on man-hours needed to do the job.

What is Hydraulic Handling? Very simply, Hydraulic Handling is the movement of granular salt in circulating saturated brine, through pipes. Referring to the diagram, you will note that dry salt from the hopper car is mixed with saturated brine in a salt-receiving pit, to form a slurry of the saturated brine and undissolved salt. This slurry is pumped through a pipe to a salt-storage tank. Overflow brine from the tank continuously returns to the slurrying pit to carry more salt into storage.

Advantages of Hydraulic Handling. Every Hydraulic Handling installation has a number of exclusive advantages:

1. Great flexibility. Because *pipes* do the work of carrying salt, a Hydraulic Handling system can be installed anywhere in the plant. Piping is flexible, and can be run where it won't interfere with other plant operating activities.

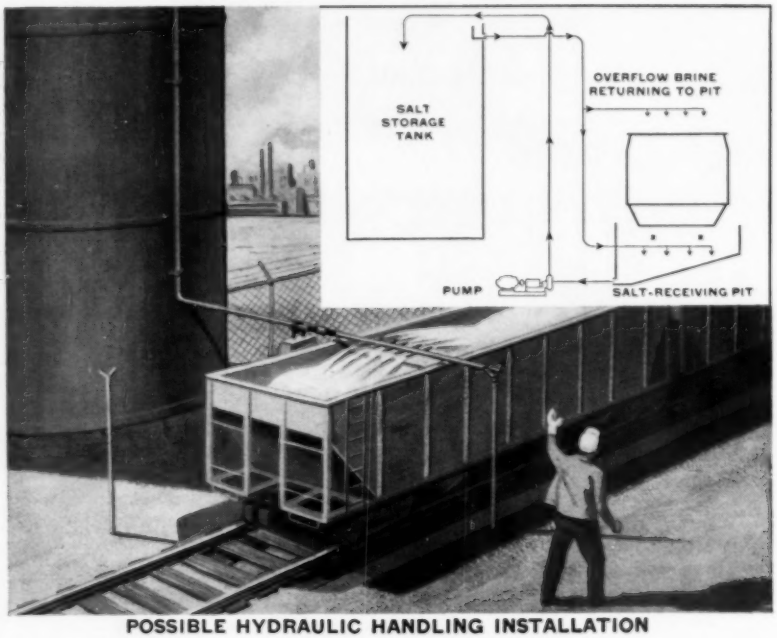
2. No need to move existing equipment. Machines that might obstruct mechanical handling equipment simply don't get in the way of a Hydraulic Handling installation.

3. Long life, low maintenance. You need no safety guards . . . no roofing to protect salt from weather . . . no belt conveyors, elevators or similar pieces of mechanical handling equipment. Also, there is never any salt dust that might corrode vital plant equipment. As a result, Hydraulic Handling installations have a long life, with very little maintenance expense.

4. Unlimited capacity. Hydraulic Handling systems can be designed to unload, move and store any amount and type of salt—rock or evaporated. Whatever your specific unloading needs, Hydraulic Handling can satisfy them.

For rock-salt users, Hydraulic Handling is especially economical when used with combined wet-storage and dissolving tanks or with International Salt Company's famous Sterling Wet-Storage Lixator. These units store Sterling Rock Salt the same way Hydraulic Handling moves it: combined with saturated brine. Thus the salt-and-brine slurry delivered through Hydraulic Handling to the Lixator *is already in the correct form.* The Lixator delivers 100%-saturated Lixate Brine through pipes to any point of use in the plant, and automatically makes more brine as needed.

From delivery to use, dry rock salt is never handled in plants equipped with both a Hydraulic Handling system and a Sterling Lixator.



POSSIBLE HYDRAULIC HANDLING INSTALLATION

You can get more information on how Hydraulic Handling can work in your plant to cut down salt-unloading and salt-handling expense from International Salt Company. One of our experienced Sales Engineers will be glad to work with you to determine the best system of Hydraulic Handling for your specific needs. He can also help you use salt efficiently in *all* your plant operations needing salt or brine.

Behind this qualified salt specialist are all the resources and experience of International Salt Company. We produce both Sterling Rock Salt and Sterling Evaporated Salt in all types and sizes . . . plus automatic equipment for making brine from both kinds of salt. So our sales engineer can recommend the type and size of salt most perfectly suited to your needs. He can also recommend the most efficient and inexpensive methods for storing, handling or using salt or brine. Ask him . . . send a card or letter to International Salt Company, Inc., Scranton 2, Pa. . . . or contact our nearest sales office.

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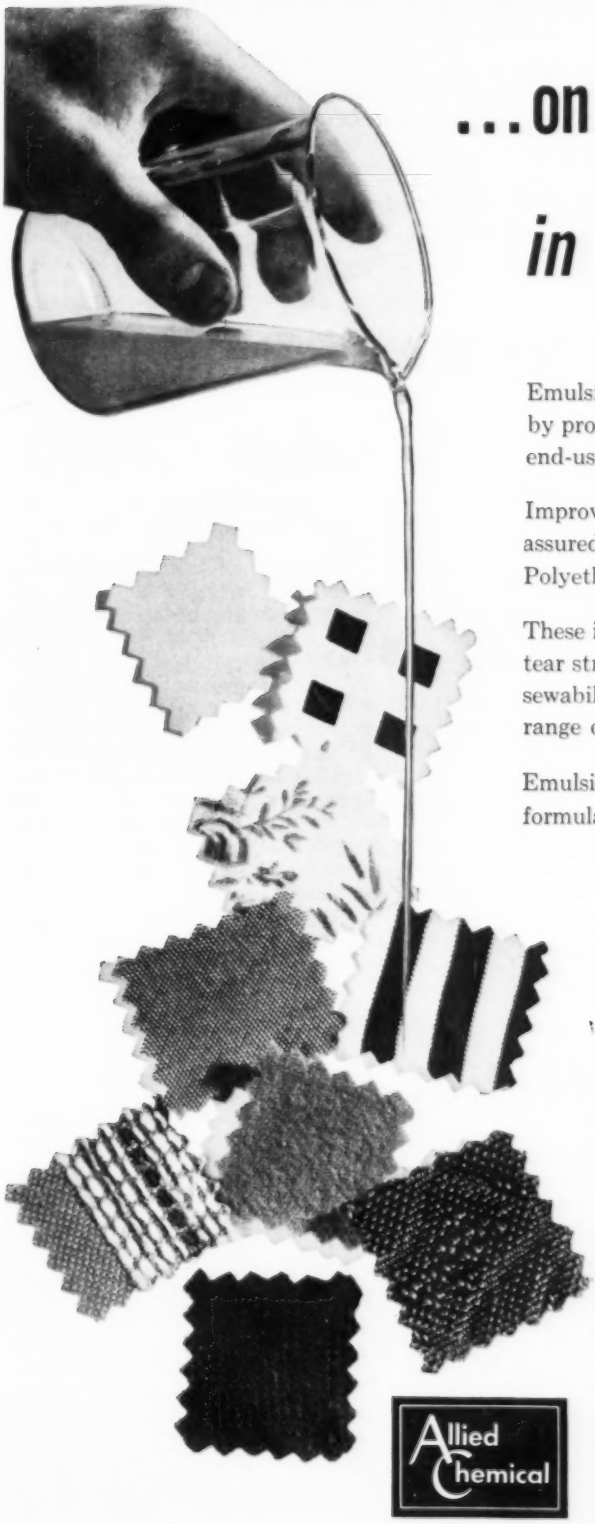

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These include: higher abrasion resistance, increased tear strength, reduced needle cutting, improved sewability, and better wash-wear finishes in a wide range of desirable hand properties.

Emulsions of AC-Polyethylene 629 properly formulated for textile uses will not retain chlorine; will not yellow whites; will not scorch at elevated temperatures; and will not affect dye shades or light fastness properties. Such emulsions are compatible with all common textile finishing agents.

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AATCC Papers Report on Trends in CHEMICAL TREATMENT

- The last group of technical papers delivered at the 36th annual AATCC convention in Boston in Mid-November are presented here in condensed form

- Intersectional-contest papers and other noncontesting technical papers appeared in the January issue of TEXTILE WORLD

How Saylesville Handles Waste Disposal

By GEORGE G. BOGREN

Cotton-finishing-plant wastes combined with sewage are being satisfactorily treated on trickling filters in a system in operation at Sayles Finishing Plants, Saylesville, R. I.

The problems of treating finishing-plant wastes by biological means are complicated by a wide variation in pH and other characteristics. This variation makes chemical coagulation impractical without extremely close supervision. The biological treatment of plant wastes is possible at high pH, but the B.O.D. demand is lowered if the wastes are neutralized before filtration. Domestic sewage is a necessary part of the influent to provide nourishment for the bacteria.

The disposal plant now in operation at Saylesville includes a primary subsiding basin holding 782,000 gals., which feeds to trickle filters through a flow-equalization system. Both low- and high-rate trickle-filter installations are used, and the effluent is delivered to secondary subsiding basins.

There is provision for recirculating the effluent from the secondary subsiding basins back through the high-rate trickle filters. Sludge-drying beds receive sludge pumped from both primary and secondary subsiding basin systems.

How Much Waste Is Handled

Over the period 1952-1957, the average flow of waste through the plant has been 2.5- to 3.3-million gals. per day of plant waste and sewage. The high-rate trickle filters handle 2- to 3-million gals. per day. The balance goes to the low-rate trickle filter.

The primary subsiding basin retains waste from 5.7 to 7.5 hrs. The secondary subsiding basins retain waste from 1.8 to 3.6 hours.

The plant's ability to reduce B.O.D. demand is affected by hydroxide alkalinity more than acidity. For example, at pH 10.5 to 11.5, with hydroxide alkalinity varying from 100 to 1300 ppm., the high-rate trickle filters reduce B.O.D. by 25 to 66%; but at pH 7.7 to 7.8, with no hydroxide alkalinity, B.O.D. reductions climb to 74 to 84%. Very low pH conditions produce a reduction of B.O.D. of 59 to 69%—better than when very high pH is encountered.

Scour Grease Wools Neutral

By E. C. HANSEN

Scouring wool by the neutral process is economical, and it produces a loftier and whiter wool. The process requires higher temperatures than the older alkaline processes. However, there is greater steam consumption, and there may be more uncomfortable working conditions.

Grease recovered from the process is darker than that from alkaline scouring, but there is greater grease recovery. The process is adaptable to existing wool-scouring equipment.

The wool should be well opened before scouring to facilitate separation and removal of solid matter. This operation will also hasten thorough wetting of the fibers.

The scouring liquors should not be retained too long or their washing efficiency will fall off. Tests have shown that borderline washing is obtained when the first scouring bowl shows a grease content of more than 2% and the second bowl contains more than 0.75% grease.

Retain Bowls for 24 Hrs.

Both the first and second bowls can be retained for at least 24 hrs., provided that the settling tanks can be opened periodically to dispose of solids deposited at the bottom of the bowls. In some mills running certain grades of wool, these bowls can be successfully used for a week before a complete change of water and recharging with nonionic surfactant is required.

Optimum scouring results are obtained when about two-thirds of the grease is removed from the wool in the initial scouring bowl. Wool should have a residual grease content of about 5 to 7% for high-shrinkage wools and about 1.5 to 2.5% for low-shrinkage wools.

Nonylphenol-base detergent with 10.5 mols of ethylene oxide is an efficient detergent.

To determine the quantity of nonionic detergent required to process a given lot of wool, figure 2 to 3% based on the weight of the grease content in the raw wool.

Addition of electrolytes such as common salt and sodium sulfate has been suggested to improve the efficiency of nonionic detergents, but the use of such additives is not warranted because the slight savings in cost of surfactant is more than offset by the cost of the electrolyte. There is an additional control problem and the danger of equipment corrosion.

Typical Procedure

Here is a neutral scouring process for a four-bowl range with 60-in. bowls:

Wool–64s
Rate–2,800 lbs. per hr.

1st bowl–2,800 gals.
Temperature–90° F.

2nd bowl–2,800 gals.
Nonionic-detergent charge – 28 lbs.
Feed per hour–44 lbs.
Temperature–140° F.

3rd bowl–2,200 gals.
Nonionic-detergent charge – 12 lbs.
Feed per hour–3 lbs.
Temperature–140° F.

4th bowl–2,200 gals. rinse
Temperature–120° F.

Average residual grease is 0.5%.

Detergent cost per 100 lbs. of raw fiber is 10¢.

Dyeing Nylon With Acid Dyes

By J. A. BITTLES, J. A. BROOKS, J. J. IANNARONE, JR., and H. P. SAUDERL

Four general methods of applying acid dyes to nylon have been developed, including solvent-assisted dyeing, cationic-agent-assistant dyeing, anionic-agent-assistant dyeing, and high-temperature dyeing.

The newer one is based on the use of a cationic agent in a dyebath kept below the boil and containing selected colors.

The anionic assistants are less effective in covering streaks at temperatures below the boil. At temperatures of 235 to 250° F., both types of assistant produce level results; and the anionic assistant tends to produce a better transfer.

The acid dyes produce faster colors than the disperse dyes; but by any of the methods to be outlined, only selected acid colors are useful.

How Solvents Help

Solvent dyeing is useful in certain applications but is not as yet of commercial importance. The phenol method is based on applying acid dyes at 212° F. in a closed ventilated jig in the presence of a 3% solution of phenol buffered with a 2.0% solution of sodium acetate. The color is gradually exhausted with acetic or formic acid. Duponol D is useful in reducing the tendency to form streaks.

Benzyl alcohol appears to be an interesting if expensive solvent that performs the same function as phenol when used at 3% solution strength with an anonic leveling agent. Heat treating at 400° F. for 20 to 30 secs. removes solvent residues after dyeing.

Cationic Assistants Work Well

Cationic agents plus selected acid dyes produce excellent leveling when applied at pH 3 to 3.5. The scoured goods are worked in a beck at 200 to 212° F., and formic acid is used to lower the dyebath pH.

For jig dyeing, the dyeing is started at 180° F., and the bath includes Alkanol L N and formic acid. Two ends are run at 180° F.; then the temperature is raised to 212° F. The jig is left open for several ends; then the cover is closed. In this way, better control of the dyeing rate can be obtained.

It is most important to select dyes that will work well with a specific cationic agent. About 80 acid dyes have been found to be satisfactory on test fabrics designed to show up gross tendencies to streaky dyeing.

Certain combinations of dyes give better results than others, and it is not always possible to get level dyeing and superior fastness. Aftertreating with tannic acid and tartar emetic in the presence of a chelating agent to minimize shade change improves wash fastness considerably.

What Cationic Agents Do

The overall effect of a cationic agent in the acid dyebath is to slow the dyeing rate. But leveling from yarn to yarn is the result of a complex formed by the cationic agent and the anionic dye. A disperse product results that does not actually dye by the same mechanism as disperse dyes.

Transfer of dye from site to site does not appear to be the answer to what goes on in a dyebath containing a cationic leveling agent. The slow release of active dye from the complex formed by the dye and the cationic agent seems to be the key to level dyeings.

How Anionic Assistants Help

For light shades, anionic agents, such as Duponol D, plus ammonium sulfate and selected acid dyes can be used to produce level dyeings. The bath is run at the boil, and the color is exhausted by adding acetic acid as necessary. The depth of shade is limited because the anionic agent occupies dye sites. The dyes that work well for the cationic process also work well with anionic agents and exhibit the same general fastness qualities.

The mechanism of dyeing appears to be a competitive race between the anionic agent and the dyestuff to occupy dye sites.

Although somewhat more expensive, the cationic-agent method produces more level dyeings under varying conditions. There are other advantages in using the cationic-agent method, including better hand and the ability to produce deep shades.

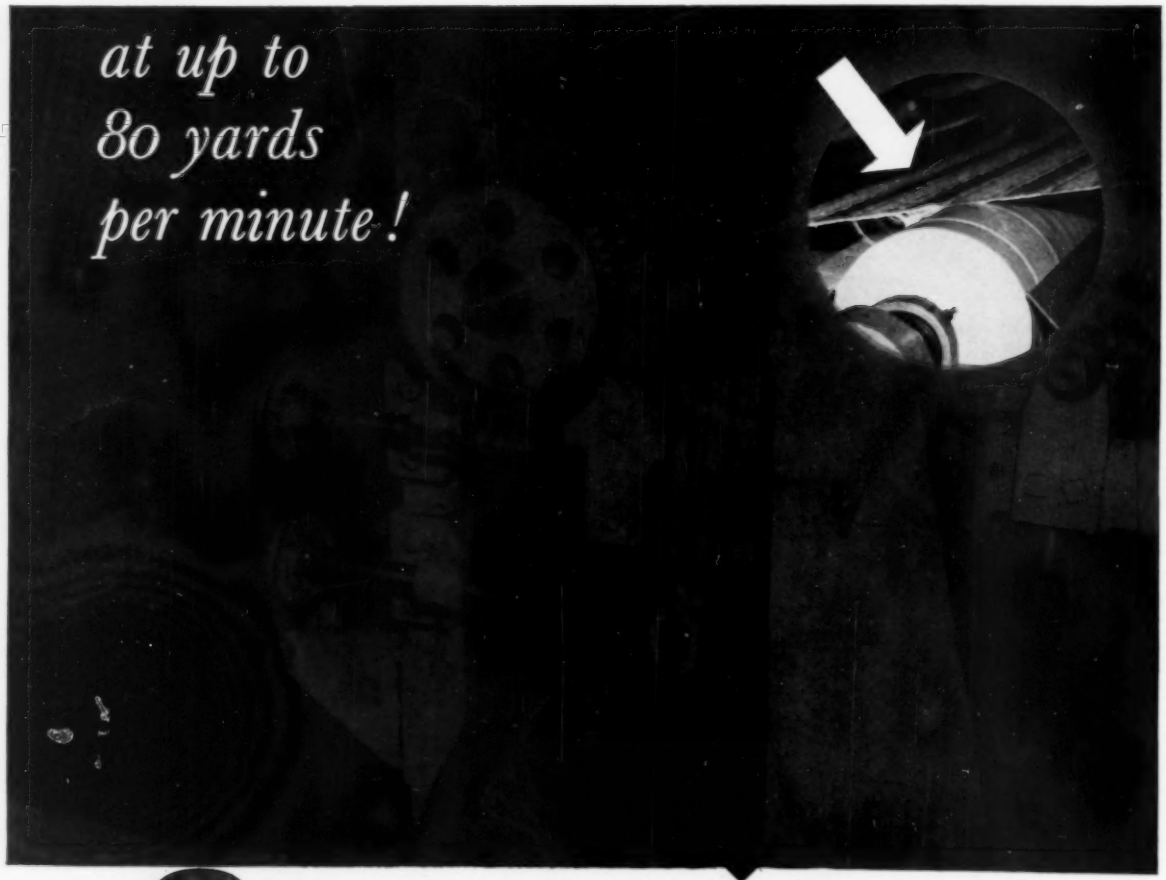
Results of both anionic- and

How to add profit to upholstery fabric....

This close-up of a modern roll coating head shows how it's done in one large southern textile plant:

The roller is applying a custom-blended General Latex backing compound at up to 80 yards per minute. It's like rolling on profit . . . by the yard! The compound provides dimensional stability . . . improved seam slippage . . . the right "hand" . . . more durability . . . adds maximum value at minimal cost.

For latex backing custom-blended with an eye to your profits, write the General Latex plant nearest you.



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cationic-agent systems are improved if the dyeing temperature can be raised to 235 to 250° F. as is possible in pressure machines. The anionic-agent system gives slightly better levelness.

The list of useful dyes can be expanded when pressure dyeing is used in the anionic-agent method.

Ultraviolet Reflectance Curves of Fiber

By GEORGE THOMSON, CHARLES A. LERMOND, and RUTH O'KENNEY

The reflectance of ultraviolet light can be measured easily and quickly and offers the textile chemist an effective tool in determining the type and history of a textile material. But to date, little or no attention appears to have been given to this method of obtaining information.

The ultraviolet regions of the spectrum (200 to 400 millimicrons) have been used to identify fibers and bleaches and can be used to identify finish and other treatments such as light exposures, optical bleaches, and heat.

Reflectance measurements have long been used in the textile industry but primarily in the field of color measurement and color specification. These applications are still valid and important.

Present methods of fiber identification are slow, involve sample destruction, and are greatly complicated by the variance in cross sections even for a given fiber type.

On the other hand, determinations of fiber type can be made rapidly by means of ultraviolet reflectance curves and without sample destruction.

Fibers Have Characteristic Curves

Slides illustrating the ultraviolet reflectance curves of cotton, viscose, ramie, cellulose acetate, cellulose triacetate, saponified cellulose acetate, natural and regenerated protein, nylon 6, nylon 6,6, terephthalates, several acrylics, and several vinyl-derivative fibers showed that each fiber has its own characteristic curve.

All curves were obtained with a conventional Beckman DU Spectrophotometer equipped with a standard Beckman reflectance attachment and a 1P28 photomultiplier-tube detector.

Fibers to be identified by means of ultraviolet reflectance curves must have no dyestuffs or extraneous finishes that would mask the basic curve.

Ultraviolet reflectance curves appear to be important enough in fiber identification to rate inclusion of the specific curve for each fiber along with other properties such as denier, tensile strength, moisture regain, and specific gravity.

How Laundering Affects Cotton Finished With DMEU Resins

By OSBORNE C. BACON, J. EDWARD SMITH, and LEHMAN E. HUGHES

Cottons finished with nitrogen-bearing resins suffer damage from chlorine retention and lose crease resistance in varying degrees of severity. Cloth construction and the type of laundering the goods are put through are prime factors in the degradation process.

Garments sent to a commercial laundry must be made of fabrics resistant to both chlorine damage and acid souring after repeated alkaline washings at high temperatures.

Garments washed in the home should be chlorine resistant but need not be stable to acid souring.

The nitrogen-bearing resins are not completely resistant to hydrolysis by acid sours and should not be used on fabrics subject to repeated commercial laundering.

DMEU resin finishes properly applied show good resistance to damage from chlorine retention. The extent of damage from chlorine retention depends on several variables, such as preparation of the fabric, selection of catalyst, curing time, curing temperature, and neutralizing wash.

The first four variables determine the completeness of the curing reaction. Fabric must be free of alkali to avoid neutralization of the acid catalyst.

In the tests made, catalysts were selected to obtain increasing activity, believed to be in the following order:

Alkylolamine hydrochloride, magnesium chloride, and zinc nitrate.

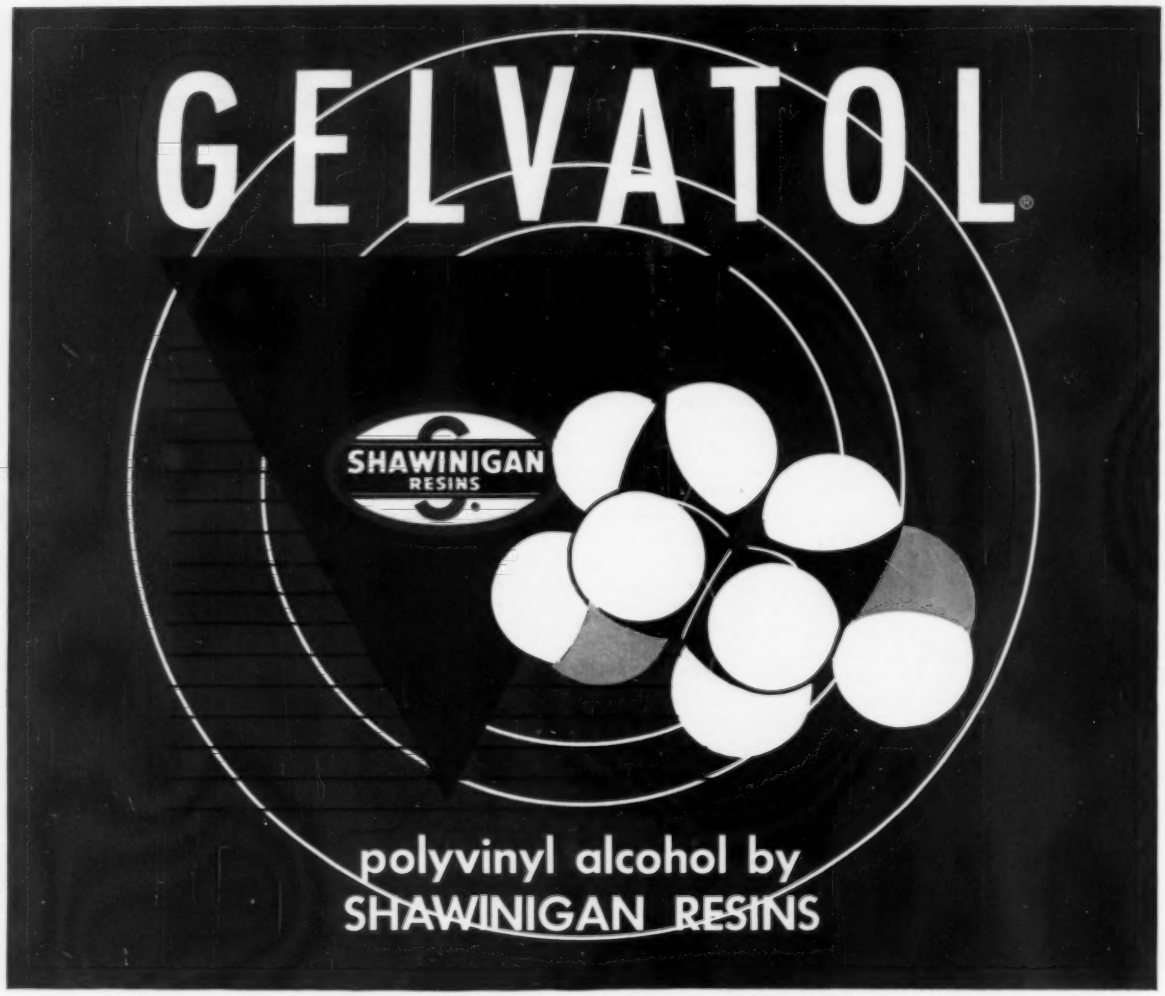
Curing time was standardized at one minute. Curing temperatures were varied to find the best temperature for each catalyst. The effect of a neutralizing afterwash was studied to establish its importance.

How Trials Were Run

The resin used was a 50% DMEU resin containing 1.5% free formaldehyde. The catalysts were hydrated forms of $MgCl_2$, $Zn(NO_3)_2$, and an aqueous solution of 40% alkylol amine hydrochloride having 10% of the amine unneutralized.

The fabric was a 2.85-yd. 80-square sheeting kier-boiled, bleached, and rinsed free of chemicals.

The resin was applied at 80° F. so as to give 4% resin owg., and the bath included 0.05% glacial acetic acid plus 1.2% on the weight of the



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bath of one of the catalysts. Samples were air-dried at room temperature and cured for one minute at various temperatures. Half the samples were afterwashed at 110° F. for 5 mins. in a 0.05% solution of a synthetic detergent and 0.1% soda ash, rinsed, line-dried, and pressed flat.

Simulated home-laundry washes were given the samples in a horizontal cylindrical reversing washer using 0.1% tallow soap and 0.05% soda ash at 140° F. for 15 mins.

The many trials made with the various catalysts, at varying curing temperatures, and on goods that were or were not afterwashed produced test results from which the following conclusions have been drawn:

1. Cottons finished with DMEU resins show excellent resistance to chlorine-retention damage, initially and after home laundering.

2. A neutralizing afterwash is essential for the best resistance to chlorine damage, especially after laundering.

3. The optimum resistance to chlorine damage is attained with Zn $(NO_3)_2$ catalyst, cured for 1 min. at 325 to 375 F. followed by a neutralizing wash.

4. Magnesium chloride is inferior to zinc nitrate but superior to the organic amine catalyst for producing resistance to chlorine damage.

5. The attainment of a crease-resistant finish is not a problem.

6. The discoloration of white fabric is least with magnesium chloride, greatest with zinc nitrate, and intermediate with alkylol amine hydrochloride. The whiteness retention with zinc nitrate is best at the lower curing temperatures.

How To Evaluate Dye Carriers

By PETER J. SCOTT

Carriers permit the dyeing of Dacron or Dacron-wool blends without resort to high temperatures and pressures that might damage the wool component in the blends.

To evaluate a carrier, a preliminary screening of possible materials should be made to eliminate those in which toxicity is a problem and those that may affect other fibers in a blend. Also, the carrier should not present any unusual application problems.

Given a carrier that meets these requirements, its workability is determined by making a number of dyeings with the carrier.

An acceptable dyeing will be level and possess the necessary fastness properties. Once these details are established, the economics of dyeing with a specific carrier are determined by making matched dyeings in which different carriers are used with identical dyestuffs. Costs per hundred pounds of goods in each case can then be figured from carrier cost and dyestuff cost in each case.

Comparisons of depth of shade then lead to dyeings in which the quantities of carrier on the dyestuff used on the darker sample are reduced until a match is achieved with the lighter sample.

How To Compare Carriers

Practically, color differences of 20% or more cannot be matched by varying carrier concentrations.

To compare carriers, a dyeing may be made as follows:

Carrier A, 14 lbs. @ 40¢....	$5.60
Dyestuff, 6 lbs. @ $4.00....	24.00
Total cost	$29.60

The shade is compared with a dyeing made with:

Carrier B, 14 lbs. @ 50¢....	$7.00
Dyestuff, 4.5 lb. @ $4.00....18.00	
Total cost	$25.00

If all other things are equal and the match is made, it is obvious that Carrier B has the better money value.

The method of evaluating carrier performance by actual plant practice has the advantage of employing regular equipment in everyday practice. The disadvantage is that the dyeing is terminated when the match is made; so complete exhaustion of the dye may not have occurred and the full effect of the carrier may not have been realized.

How Lab Checks Are Made

In the laboratory it is possible to make a standard dyeing with one carrier and then comparable dyeings with another carrier in a series where the amount of dye is reduced in each dyeing. The recommended amount of carrier is used in all dyeings; the relative efficiency of the carrier is observed by the amount of dye it will drive on to the fiber.

The dyeings are all run for, say, 3 hrs. at 208° F. Then the series dyed with varying amounts of dye are compared for depth against the standard dyeing made with the standard carrier.

Money values are then easily and quite exactly obtained from the comparison of cost of the standard dyeing versus the trial dyeing that most closely matches it.

Carrier volatility can be checked by running dyeings similar to those described except that in all cases only two-thirds of the dye to be used is added initially and the balance after 2 hrs. dyeing time. Carrier volatility variations will then show up in the dyeing.

A dyebath carrying 12 1000-ml. pots equipped with mechanical agitators is a good apparatus in which to dye 20-gm. samples. A 20-to-1 bath ratio is similar to beck bath ratios. The 20-gm. samples are folded in thirds lengthwise and sewed along one of the folds to form a loop.

The sample is threaded on a heavy spiral wire, and another wire spiral is inserted in the bottom of the loop. The upper spiral wire is attached to the agitating mechanism and moves about four ins. up and down at 30 strokes per minute. Beakers are covered with a vented cover to reduce evaporation and conserve heat.

Typical test runs in the laboratory were based on formulations to find out the comparative efficiencies of various carriers and the effect of varying the amount of carriers in the dyeings. All results have to be considered in the light of compliance with satisfactory appearance and fastness.

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Many of STANSET's friends are enthusiastic about the above features of STANSET and also about the extremely low tensile loss due to chlorine bleaching, as well as its superior non-yellowing characteristics.

There are other features about STANSET chemical reactor resins *you should know*. If you would like to receive additional material regarding STANSET, write us — we'll be glad to send it to you. There's no obligation. Remember — the sooner you learn about all of STANSET's excellent characteristics, the sooner you can put them profitably to work for you.

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How To Dye Zefran And Zefran Blends

By AL MESSER

Zefran dyes readily with vat, soluble vat, sulfur, naphthol, aftertreated direct, and neutral premetallized colors.

Combinations of neutral premetallized dyes for the Zefran and milling colors for the wool are best handled by dyeing the Zefran first in the presence of ammonium sulfate and leveling agent.

Manipulation of dyeing temperatures, pH, and bath contents for various dye combinations provides control of leveling and shade matching.

How Naphthols Work

Zefran dyes with both substantive and nonsubstantive types of naphthol colors.

Zefran-cellulosic blends can often be dyed with one base under proper conditions. If there is a tendency of the base to build up on the cellulosic fiber, the Zefran can be built up by using nonsubstantive naphthols.

Vat dyes level out on Zefran very well at relatively high dyeing temperatures and do not fall into the cold-, warm-, and hot-dyeing groups as they do in cellulose-fiber applications. Fastness properties correspond well with similar dyeings on cotton.

How Zefran-Cotton Blends Work

Zefran-cotton blends should be prepared for dyeing by boiling off in a mild alkali and a detergent for 15 mins. Goods of this type should be mercerized before bleaching and the cotton should be bleached with chlorine, followed by a chlorite bleach for the Zefran. Peroxide should not be used in bleaching Zefran-cotton blends.

A reserve agent should be used on light shades to hold back the Zefran. Medium vat shades show less tendency to unlevelness.

Heavy shades build up best at temperatures of 140 to 176° F.

Soluble vat dyes work best on Zefran when applied at 140° F. for 30 to 45 mins. with 0.75 to 5 oz. per gal. of Glauber's salt at a pH of 8 or lower. Oxidation should start at room temperature with 1.2 oz. per gal. of sulfuric acid and 0.2 oz. per gal. of sodium nitrite. The temperature is raised to 140° F. and the process run for 10 to 15 mins.

Sulfur-Dyeing Tips

Sulfur colors can be used on Zefran. The lower alkalinity of the soluble types is an advantage in dyeing Zefran. Dyeing is carried out at 205° F. with soluble sulfur dyes; the powdered types are run at 180° F. at a pH of 10. Excess alkalinity may be buffered with sodium bicarbonate. The usual oxidation procedures for sulfur dyes are used.

Aftertreated direct colors build up well on Zefran and can be used as supplements to premetallized colors in some cases.

Zefran can also be dyed by continuous dyeing methods, including pad-steam and Williams-unit setups.

Prints on Zefran with vat, soluble vat, and Rapidogen dyestuffs show good yields. Thickeners should be chosen that are easily removed from the fiber.

Treating Textile Wastes Economically

By R. H. SOUTHER and T. A. ALSPAUGH

An important problem in the textile industry today is to find the most effective and economical treatment of its waste.

In the past, textile wastes have been considered one of the most difficult and complex wastes to treat because of the presence of strong dye and alkalis or acids. Now, satisfactory methods for treating textile wastes biologically, in the same manner as domestic sewage, have been worked out.

Research at Cone Mills Corp. indicates that:

1. It is practical to treat mixed domestic sewage and highly alkaline textile waste even without chemical pretreatment if hydroxide alkalinity is not excessively high.

2. Pilot-plant studies indicate that highly alkaline textile-mill waste can be treated better by trickling filter and activated sludge when it is combined with domestic sewage than when it is treated separately.

3. Treating combined domestic sewage and highly alkaline textile-mill waste through trickling filter and aeration processes, without chemical pretreatment, reduced pollution of the effluent enough to be acceptable to a small receiving stream.

However, treating the mill waste separately from domestic sewage through trickling filter only, without aeration but with an expensive chemical pretreatment, did not reduce pollution enough to make it acceptable to a small receiving stream. Additional treatment was required.

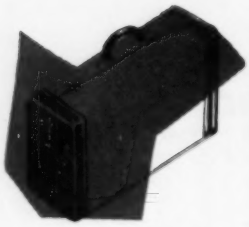
4. Combined treatment of mill waste and sewage in a single plant is preferable to single treatment in two or more plants because over-all cost is reduced and treatment is better supervised.

5. A good waste-reduction program in the plant can substantially reduce the pollutional waste load. Some waste-reduction methods are: reduction of volume or flow, reduction in amounts of chemicals, recovery and reuse of chemicals, recovery of by-products, and substitution of chemicals.

6. Strong wastes should be separated from weak wastes if such separation will permit disposal of the weak wastes with little or no treatment and little or no changes in piping, etc.

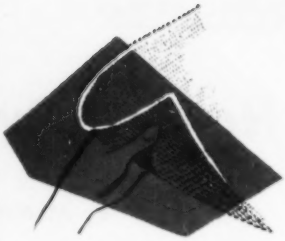
7. A lagoon can be used to reduce B.O.D., hydroxide alkalinity, solids,

for paper treatment



for leather finishing

for water-based paints



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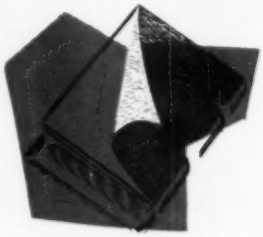
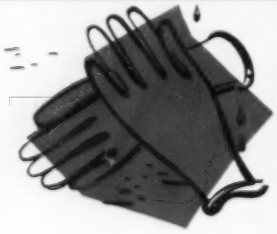
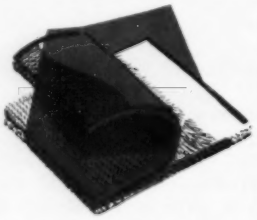


for bonding wood, leather, fiber

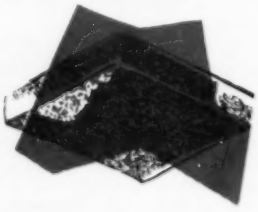


for dipped products



for binding flooring, cushioning

for pressure-sensitive tapes



for bonding curled hair or vegetable fibers

There seems no end to the ways custom-compounded latex enables industrial chemists to improve products...reduce product costs...and often do *both* at the same time!

Since Naugatuck Chemical first made latex a practical material of industry, more than 30 years ago, a tremendous variety of new rubber and plastic latices have been developed. New compounding techniques have been introduced. Scores of new uses for these versatile colloidal dispersions have been discovered.

Today, as through the years, Naugatuck remains the world's leader in latex development, compounding and supply. Its three modern latex compounding plants, strategically located at Gastonia, N. C., Los Angeles, Calif., and Naugatuck, Conn., provide fast, economical shipment to all parts of the country. Its technical service is outstanding.

So, whatever your application or need, whatever the quantity, remember...IT'S NAUGATUCK FOR LATEX!

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and some color.

8. Chemical treatment is usually too expensive and should be used only when biological treatment is not practical or economical.

9. Only the amount of hydroxide alkalinity limits the amount of textile waste that can be treated without pretreatment.

New Bleaching Process Saves Peroxide

By W. R. STEELE and S. M. ROGERS

About 80% of cotton textiles are bleached with peroxide. A lot of this peroxide goes down the sewer. Silica complexes form and precipitate on the cotton and equipment. Highly purified water has to be used for post-bleach washing; so peroxide bleaching is expensive.

Several ways of conserving peroxide have been investigated. Hypochlorite with peroxide proved to be promising; so optimum sodium-hypochlorite bleaching conditions were established.

If the cloth is saturated for about 1 min. with 1 gram per liter of sodium hypochlorite immediately before peroxide bleaching, the peroxide and additive can be reduced and the cloth quality improved. The cloth is squeezed to about 100% wet-out after saturating and allowed to stand for 10 to 20 mins. at room temperature. Without washing, the cloth is treated with the peroxide and additives.

pH Was Higher

At one mill, the pH of the bleached cloth was higher than that bleached in the regular way. This higher pH was considered to be detrimental in subsequent processing.

The hypochlorite was noted to be made by chlorinating soda ash rather than sodium hydroxide. Consequently, the excess alkalinity was sodium carbonate and sodium bicarbonate rather than sodium hydroxide.

Both the sodium carbonate and the sodium bicarbonate carried through into the peroxide saturation.

Extra Equipment Is Needed

Where cloth is bleached by the continuous-saturator J-box peroxide process, the hypochlorite step follows the washing after caustic-soda J-boxing. Extra equipment includes a saturator and a J-box big enough to provide the 10- to 20-min. contact time at room temperature.

In batch kier procedures, where the cloth is washed outside the kier and reloaded into the same or another kier, the hypochlorite step follows washing after kiering and precedes reloading. The cloth is saturated with the required hypochlorite and put through a small J-box at room temperature prior to repiling mechanically with the peroxide liquor in the kiers.

When the cloth is processed entirely in the same kier, hypochlorite liquor at room temperature is introduced following the caustic bath and washing. This liquor is circulated for 10 to 20 mins. and drained. The peroxide liquor is then introduced and bleaching done in the regular manner.

The kier, pipe lines, and pump should be resistant or made resistant to hypochlorite by painting with a mixture of cement and sodium silicate.

The Market for Textile Chemicals

By S. D. BERGER, JR.

In 1955 the textile industry consumed $2.3-billion worth of chemicals. Of these, $1.6-million came from inorganic and nonpetrochemical sources and $700-million more were of petrochemical origin. The U.S. total production of chemicals was valued at $7.22-billion.

These figures are based on the prices of chemicals delivered to textile manufacturers and include the cost of synthetic fibers bought by the plants.

Another breakdown, based on the actual chemical consumption of the industry and corrected to include only the chemical raw materials used to make synthetic fibers, shows that $569-million is a more-realistic figure. This figure excludes processing costs, natural raw materials, and profits.

In fact, of the $2.3-billion worth of chemicals consumed by the industry, $1.9-billion can be allotted to synthetic-fiber production. The balance is divided between dyes and finishes ($175-million) and textile-processing chemicals ($211-million).

A comparison between petrochemicals and nonpetrochemicals shows that petrochemicals supplied 30% of the synthetic-fiber usage, 50% of the dyes and finishes, and 26% of the requirements of textile-processing chemicals.

Much of the value of the nonpetrochemical products was accounted for in producing the fabrics and does not appear in the finished product. The materials include detergents, alkalis, bleaches, lubricants, salts, soaps, and starches.

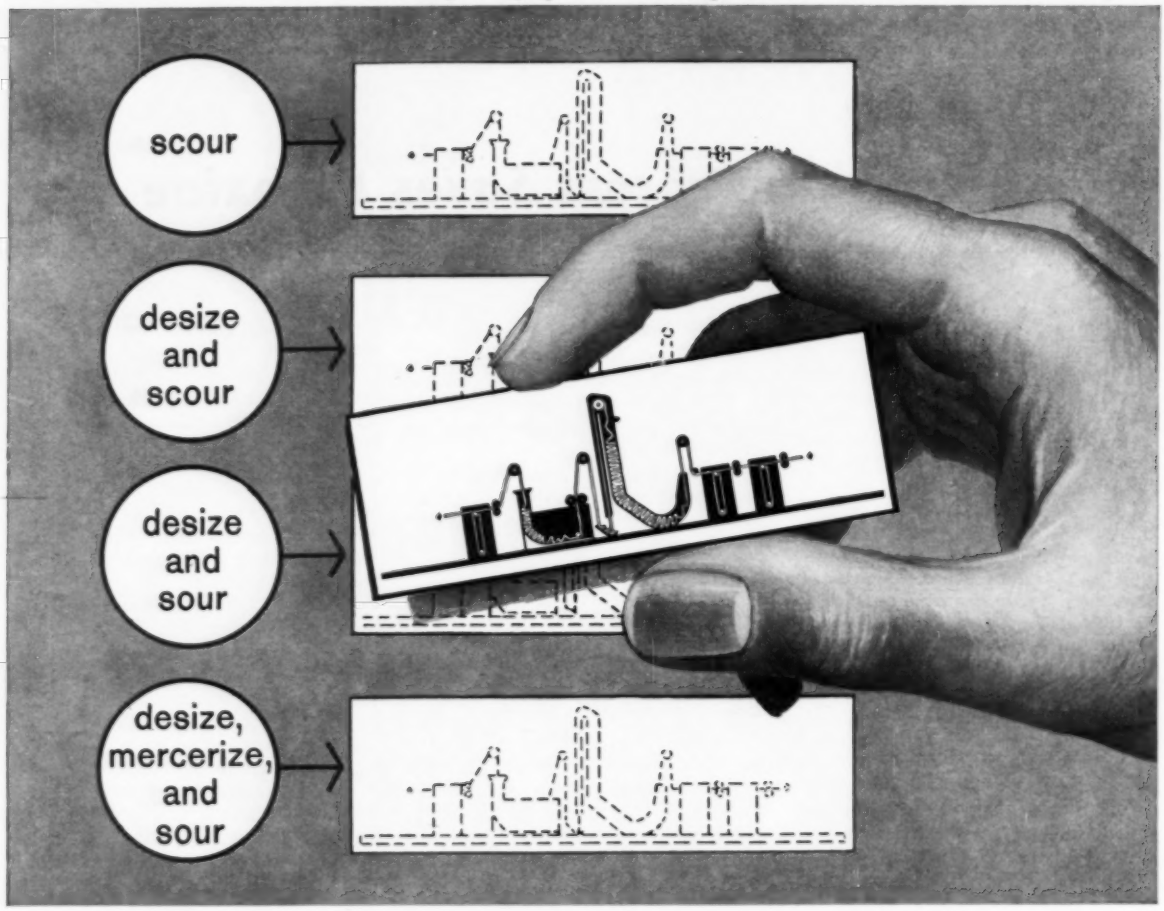
In 1955, there was $55-million worth of petrochemicals used in textile processing. Synthetic detergents dominate the picture; but significant amounts of formaldehyde, synthetic glycerol, solvents, and defoamers were used.

The development of the new fibers has created both problems in processing and large markets for textile chemicals.

Petrochemicals have supplied dye assistants, solvents, static reducers, and lubricants in growing amounts.

The market for textile chemicals will grow as a corollary to the research effort now being exerted in the textile industry. Research in 1955 amounted to $250-million and is increasing at a rate of 14% per year.

Fits in with any type of pre-treatment...



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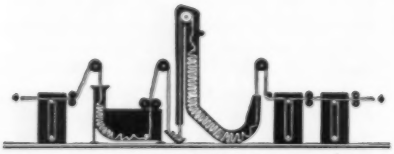
Savings are a key item, too. Du Pont's Solo-Matic process has the same capacity as multi-stage bleaching systems... yet saves up to 40% on capital investment and operating costs. This advanced single-stage system assures high uniform brightness with a minimum of equipment! For more details, write Du Pont at the address below.



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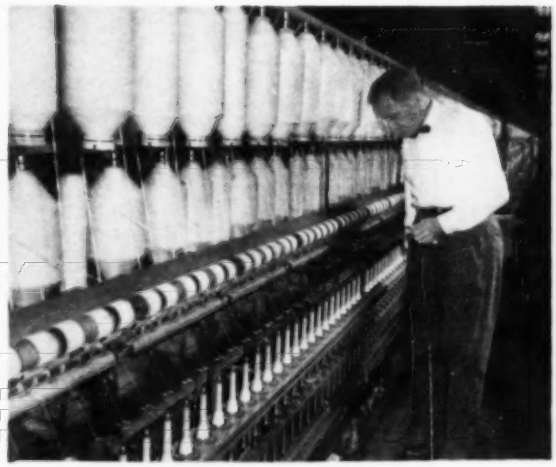


SPINNING FRAMES are carefully and frequently inspected by the overseer to determine the possible causes of ends down. Daily tests are run by the laboratory.

OPERATORS CLEAN WEIGHTS by using an extended spindle on the mechanical picker. The long spindle is put between the roving ends without disturbing them.

Modern Methods Reduce ENDS DOWN at Spinning

Woodside Mills, Greenville, S. C., has reduced ends down more than 50% at spinning by—

- Modernizing equipment
- Establishing preventive maintenance
- Investigating causes of yarn breakage

To keep abreast of the highly competitive print-cloth market, Woodside Mills, Greenville, S. C., has modernized its spinning room as part of a large-scale improvement program.

Improved machinery and management techniques have:

1. Increased production per man-hour
2. Reduced manufacturing costs
3. Improved yarn quality

Mechanical improvements were made on 171 warp and 143 filling spinning frames.

All of these frames were equipped with new drafting systems, suction cleaning, and umbrella creels. Top-drive spindles were put on the reworked filling frames.

Ends Down Are Reduced

Mechanical and manufacturing improvements in carding and spinning decreased ends down on warp frames from 50 to 18 per thousand spindle hours and on filling frames from 55 to 23 per thousand spindle hours.

Break factor, evenness, and appearance went up.

Part of the gains are credited to the modernized carding equipment. However, an average of 46% of the spinning ends down are traceable to carding faults, such as doublings, hard ends, piecing, etc.

About 48% of the ends down are the fault of the spinner, and the remainder are traced to mechanical and miscellaneous causes.

Daily Analysis Is Made

A daily analysis of ends down on specified frames is made by the laboratory; and copies are sent to the superintendent, spinning-room overseer, and other interested parties.

The top section of the form lists the yarn number, mix, ring diameter, front-roll speed, twist multiplier, twist gear, number of sides per spinner, number of spindles tested, number of hours, tested hanks run, frame efficiency, and the name of the operator.

The second section of the form has a column for ends down traceable to roving faults, which include break-backs, clearer waste, slubs, doublings, singlings, hard ends, and plugged trumpet.

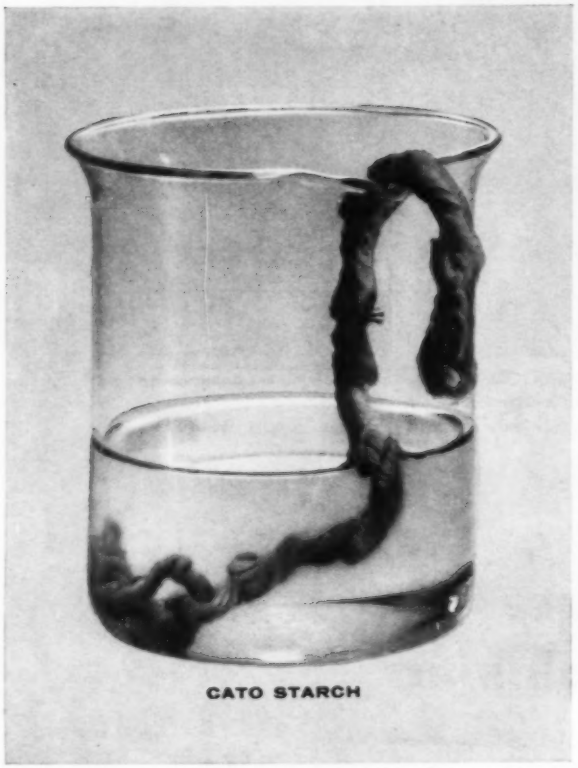
The third section of the form lists ends down directly traceable to the spinner. These faults include roving run-outs, creeling, piecing, and cleaning.

Mechanical Failures Are Studied

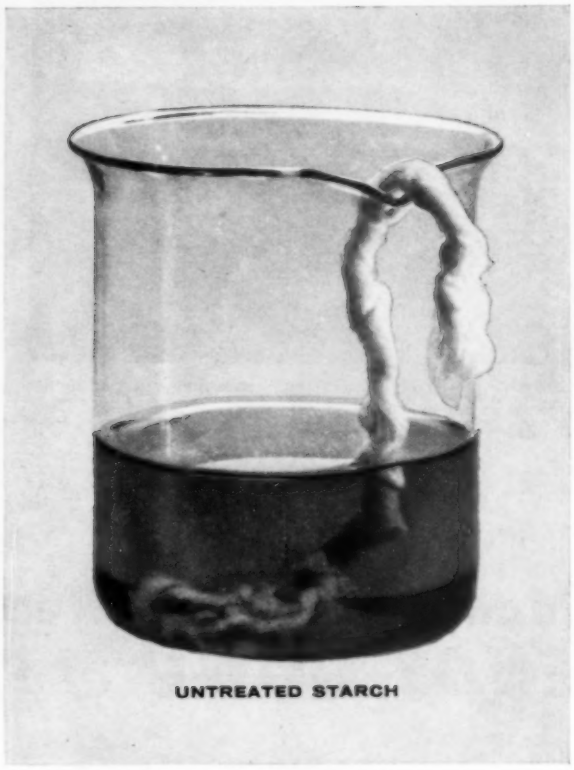
The final section of the checklist covers mechanical and miscellaneous causes of ends down. The list includes: lap on steel roll, lap on top roll, clearer waste, fly waste, traveler

CATO®

CATIONIC STARCH FOR WARP SIZING



CATO STARCH



UNTREATED STARCH

IODINE TEST proves greater starch affinity

A simple experiment. Take 100 ml. of solutions of Cato and corn starch at 0.005% concentration. To each add a 1 gram strand of any anionic yarn: cotton, wool, viscose, dacron, or others including blends. Boil for a few minutes. Cool and allow strands to drain as shown above. Now add drops of iodine to the strands and their respective solutions.

What happens?

The blue of the iodine test for starch proves the much greater affinity of Cato to anionic yarns—due to its patented cationic molecular structure. Showing how Cato promotes better adhesion, reduces shedding and improves weaving in warp sizing.

Interested? We'll be glad to supply trial quantities and have one of our textile specialists demonstrate in your plant.

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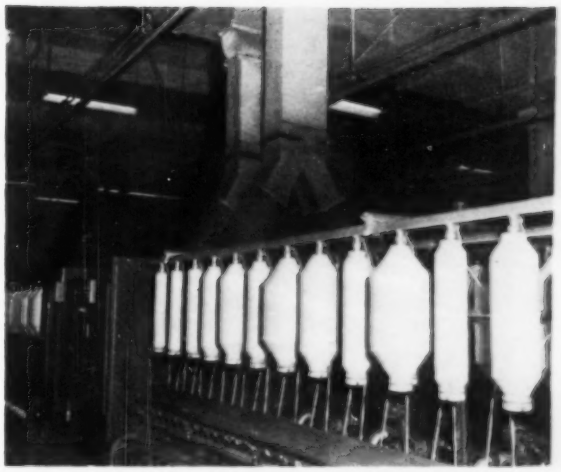
ROVING HAULER fills small spinners' buggies and leaves them parked at the end of each frame. The practice gives spinners more time for patrolling.



MECHANICAL IMPROVEMENTS helped reduce ends down. All frames have been equipped with umbrella creels, suction cleaning, and new drafting systems.

off, tape off, bad bobbin, bad spindle, lint on travelers, oily lint, waste on spindle, end broken by doffer, end broken by blow-off man, flyovers, and unknowns.

The number of ends down and the percentage of the total are tabulated for each category and posted on the form along with wet- and dry-bulb readings and the relative humidity.

These reports are compared from day to day and from frame to frame. When individual frames or operators repeatedly show excessive ends down in certain categories, an investigation is made and the trouble is corrected as soon as possible.

Efficiency Is 98.5%

Woodside's spinning frames run at 98.5% efficiency, compared with 96% before they were modernized. One of the reasons for the high efficiency and low number of ends down is a carefully supervised program of preventive maintenance.

Warp frames are completely dismantled and overhauled twice a year; filling frames are overhauled once a year. Spindles are plumbed, frames are aligned and leveled, and rings are wiped out. All other parts are cleaned, checked for wear, and replaced if necessary.

Steel rolls are cleaned twice a year on filling frames and three times on warp frames. Top-roll cots are rebuffed when the rolls are cleaned.

Another factor that improved Woodside's frame efficiency was adoption of the cycle method of doffing. For example, running time for filling bobbins is 4 hrs.; half of the frames are doffed every 2 hrs. For warp frames, running time is 9 hrs. and the doffing cycle is 3 hrs. Downtime for doffing is held to a minimum.

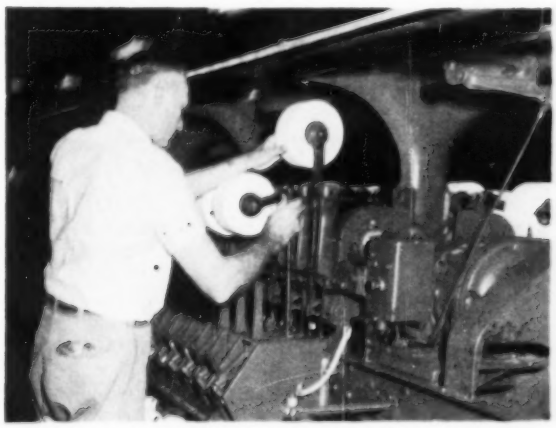
Here Are Processing Data

The warp frames, used to spin 31s, are 3½-in. gauge and have 2-in. rings and a 9-in. traverse. A 4-0 traveler is used.

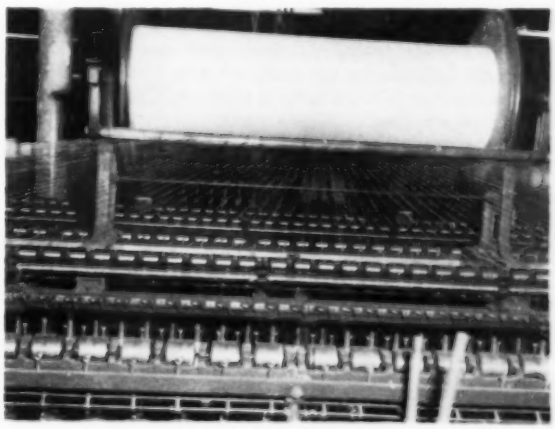
Spindle speed is 10,000 rpm., twist multiplier 4.35, front-roll speed 139 rpm., and draft 37. About 7,500 yds. of yarn are put on the bobbin. Break factor is 2,250.

The filling frames, used to spin 41s, are 3¼-in. gauge and have 1⅝-in. rings and a 7-in. traverse. A 6-0 traveler is used to put 2,500 yds. of yarn on the bobbin.

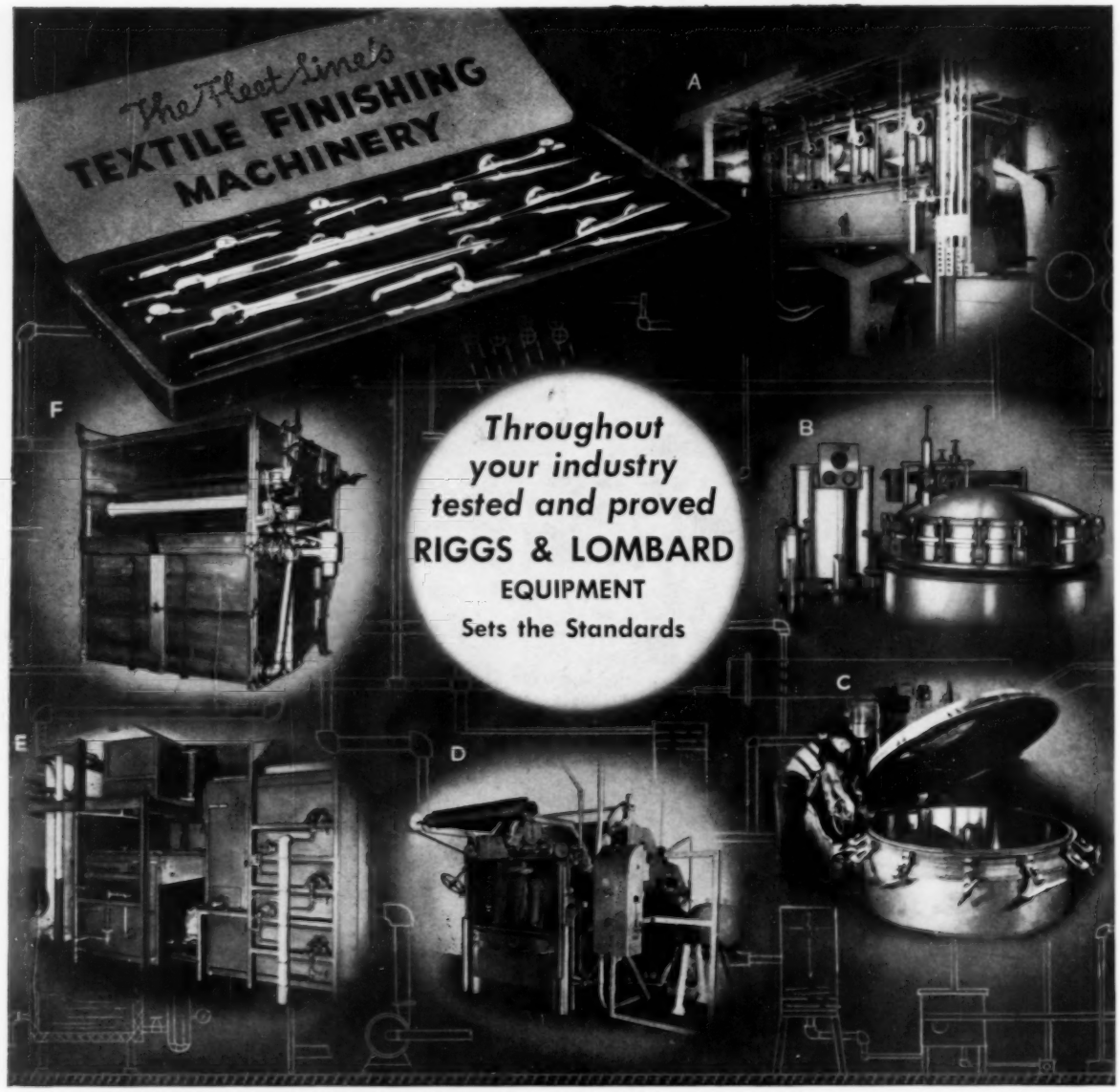
Spindle speed is 10,000 rpm., front-roll speed 132 rpm., twist multiplier 3.85, draft 35, and break factor 2,000.



SPOOLER MAINTENANCE is done as needed to keep machines in top condition. Spoolers are periodically torn down and overhauled from end to end.



SELVAGE TWISTERS were modified to produce stronger ply yarn and to balance production. One beam stand was removed from this machine.



In textile finishing plants everywhere, R & L equipment has for years been proved best by the only conclusive test — its record for producing high quality in consistently economical operation. Familiar with high standards because we set them, we also know your equipment needs and in our own field we answer them all. Check through the list to see how many ways we can serve you!

A. Continuous Crusher. B. Stainless Steel Hy-Temperature Stock Dyeing Machine. C. Stainless Steel Atmospheric Pressure Stock Dyeing Machine. D. Stainless Steel Fulling Mill. E. Derby Dry Cleaner. F. Dolly Cloth Washer.

TYPES OF R & L EQUIPMENT

Bleaching Equipment
- Caustic Washers
- Progressive Jigs
- Kettles
- Tanks

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- Cloth Carbonizing Ranges

Cleaners
- Derby Continuous Dry Cleaners

Compacting Machines

Crushers
- Continuous
- Semi-continuous

Dyeing Equipment
- Dye Becks
- Dye Kettles
  - Piece Dye Kettles
  - Rug Dye Kettles
  - Sample Dye Kettles
  - Stock Dye Kettles
    - Standard
    - Hy-Temperature
- Top Dyeing Machines

Dryers
- Tenter

Fulling Mills
- Cloth
- Endless Felt

Laboratory Machines

Padders

Pails

Parts

Poteyes

Pusher Mills

Reels

Rolls
- Miscellaneous
- Fulling Mill
  - Rubber Ring
  - Vulcanized Rubber
  - Wood Lagged

Washer,
- Wood
- Rubber
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- Rope Soapers
- Soap Distributing Systems
- Soaping Machines, Rope
  - Open Width

Special Machines

Squeeze Roll Extractors

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- Miscellaneous
- Size Mixing
- Storage

Trucks
- Cloth
- Dye
- Pin

Washers
- Cloth Washers (Batch & Continuous)
- Open Width
- Dolly
- Felt Washers, Endless

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On modernization or new installations, consult an R & L "Engineers' Engineer". No obligation!

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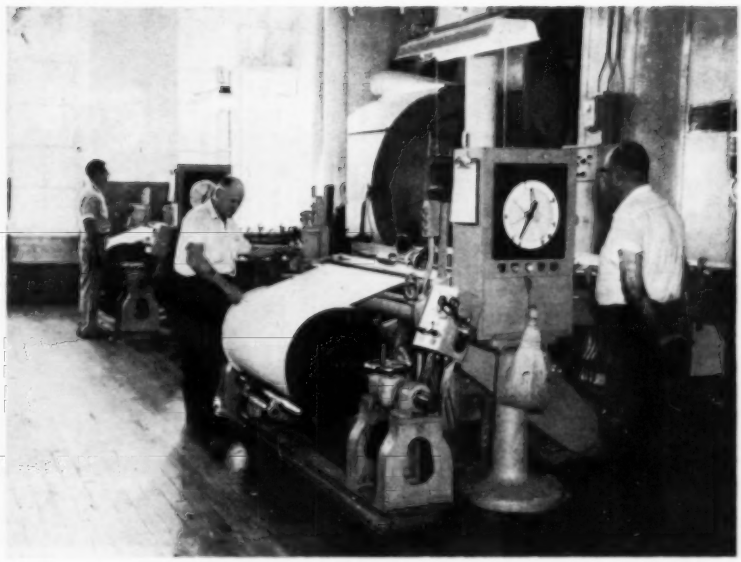


HEAVY SETS are sized on the hot-air slasher in the foreground, and lighter sets are sized on the three-cylinder slasher.

TWO SLASHERS Replace Four At Arkwright Mills

- The slasher room at Arkwright Mill's Plant No. 1, Spartanburg, S. C., has been modernized. The number of slashers has been cut in half, but more warps of better quality are being sized.
- Although 100 more looms have been placed in production in the weave room, the slashers keep plenty of sized warps on hand without running overtime.

ARKWRIGHT MILLS, SPARTANBURG, S. C., HAD A SLASHING PROBLEM. To keep its 668 looms operating five days per week, the four slashers had to run six days. On some sets the slashers were not capable of speeds exceeding 15 yds. per min.

So the slasher room was rebuilt from the floor up. In fact, a new floor was the first project. New lights were also installed.

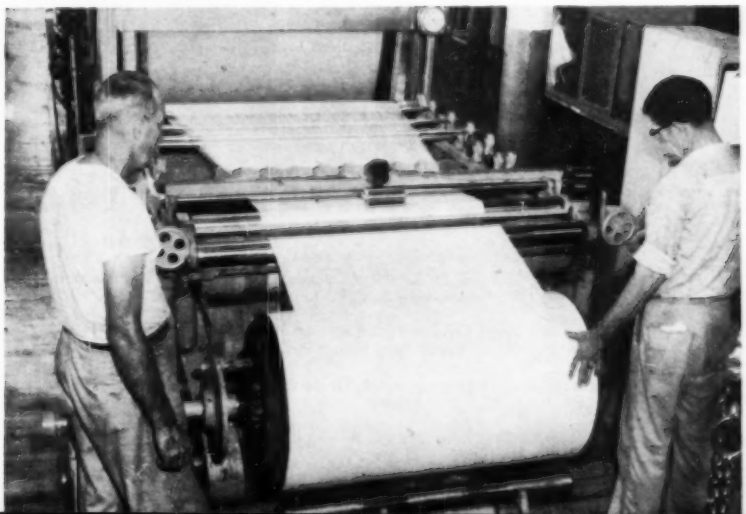
Now, with two slashers instead of the original four, the slasher room keeps plenty of warps sized for its looms without running overtime.

In addition to eliminating a bottleneck in production, the mill has also realized a number of other advantages from its new slasher room. To quote Arkwright's general manager, Mr. C. B. Hayes:

"There has been a saving in labor cost by a reduction in the number of slasher operators and by cutting out most of the overtime pay. A change-over from thin-boiling to pearl starch has also helped reduce costs. There is some saving of steam and electricity.

"Among other advantages are smoother, more-uniform warps with

PRESSER ROLL, pneumatically controlled, adds about 15% additional yarn to the 24-in. loom beams.



Proctor

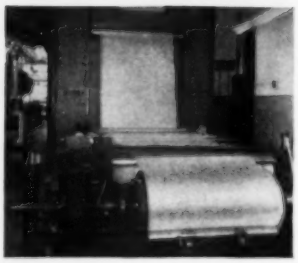
profit making developments for the textile industry

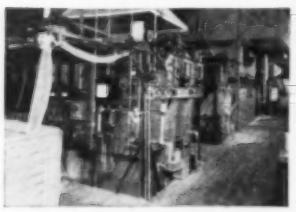
PROCTOR ENGINEERED BLENDING SYSTEM

Proctor Engineers, pioneers in the development of automatic blending equipment, are prepared to design a system, either partially or fully automatic, to meet the needs of any mill, for blends of any size or type.

HOT AIR SLASHER DRYER

Designed for maximum production of quality yarn, capacity varies from 900 to 1500 pounds of dry warp per hour. Features patented parallel flow nozzle system which eliminates rolling and tangling of the yarn.



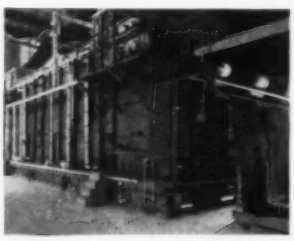


CONTINUOUS BLEACH RANGE

This new range for processing tubular knit goods pays for itself in as little as 1½ years. Eliminates sorting of batches for color, produces highest quality knit goods at greatly increased speeds.

EQUIPMENT FOR NON-WOVEN FABRICS

Proctor can now offer complete processing ranges, including equipment for opening, blending, web-forming, bonding, drying and curing, slitting and winding.

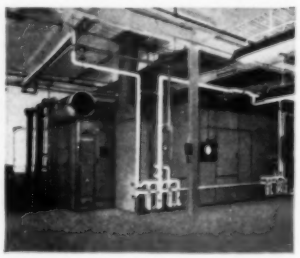


LOOP AGER FOR PRINT GOODS

This advanced system for aging vat dyed print goods eliminates aging re-runs, offers savings in direct labor, dyestuffs, glycerin and steam, often yielding profits equal to original investment in one year.

LOOP DRYER-CURERS

Greatest drying and curing uniformity ever offered, maximum production capacity, less down time through elimination of many maintenance operations, and the smoothest interior for improved cleanliness.



CARPET DRYER

This versatile machine dries all types and weights of carpet from any wet condition—dyed, back-coated, steamed, face-treated or anti-soil treated—all in one operation.

TENTER HOUSING

Offers the greatest drying capacity per foot of length ever offered the industry with 80% to 195% more drying capacity than older, conventional tenter housings. Duplex air circulation gives highest uniformity of drying or curing.

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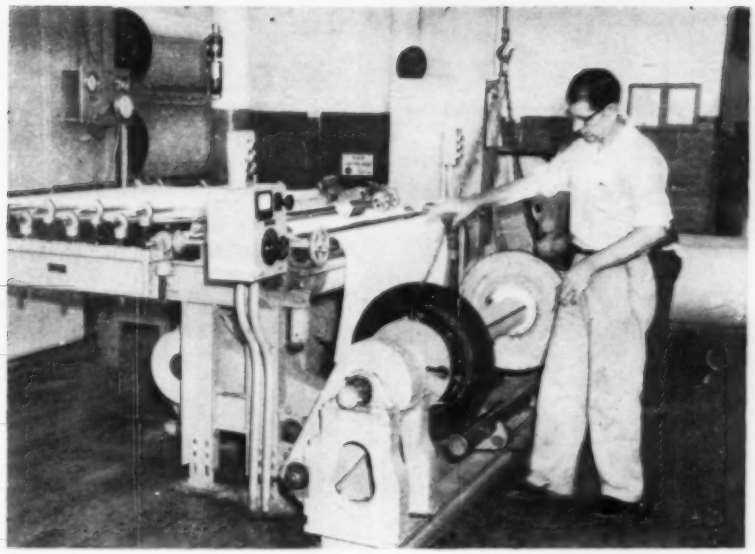
Manufacturers of Textile Machinery and Industrial Drying Equipment



ELECTRIC HOIST and overhead rail conveyor make doffing and handling of section and loom beams easy.

better size penetration.

"A 4% increase in size application with only 0.5% variation.

"A 4% increase in loom efficiency accompanied by a 2% decrease in seconds.

"An over-all reduction in slasher waste of 75%.

"Intangible but equally important benefits include a cooler, more-comfortable work place and the removal of a safety hazard by the elimination of manual lifting and handling of beams."

Will Pay For Itself in Two Years

Although the modernization of Arkwright's slasher room has been expensive, the tangible benefits alone will pay for it in less than two years. The installation of machinery and equipment was done by Textile Shops, Spartanburg.

An Uxbridge Gentle Air Model A slasher was bought from the liquidated Darlington Mfg. Co. A new Textile Shops front with Reliance drive and two Griffin size applicators were added. An additional pass and fan were installed in the drying box.

One of the old three-cylinder slashers was completely rebuilt. This slasher also has a Textile Shops front with Reliance drive and a Griffin size applicator. Its 7-ft. cylinder and top 5-ft. cylinder use 14 lbs. of steam; the bottom 5-ft. cylinder has a steam pressure of 10 lbs.

Both of the slashers have Honeywell Moist-O-Graph moisture controls and pneumatic presser rolls. Generally, heavy sets are run on the Uxbridge slasher and lighter sets on the cylinder slasher. Both slashers have an average speed of 70 yds. per min.

Slasher sets are composed of 1,955 to 4,700 ends of 13s and 17s carded cotton. Moisture regain is 7½%, stretch is 2%, and size pickup is about 12½%.

Slasher Waste Has Been Reduced

A change-over from 20- to 24-in. loom beams has increased the operating efficiency of the slashers and has reduced waste. The addition of pneumatic presser rolls to the slashers has also given another 15% increase in the amount of yarn on each loom beam.

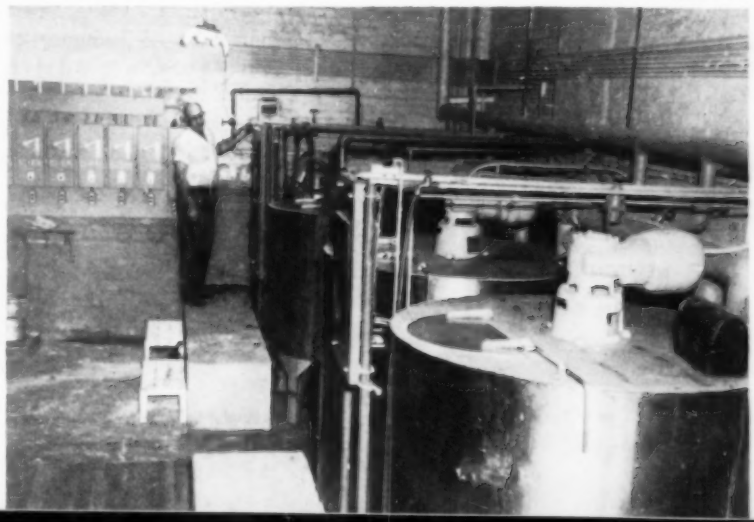
New size-preparation equipment that has been installed includes a stainless-steel cooking kettle, two stainless-steel storage kettles, a Manton Gaulin homogenizer, water-flow meters, and automatic recording and control instruments.

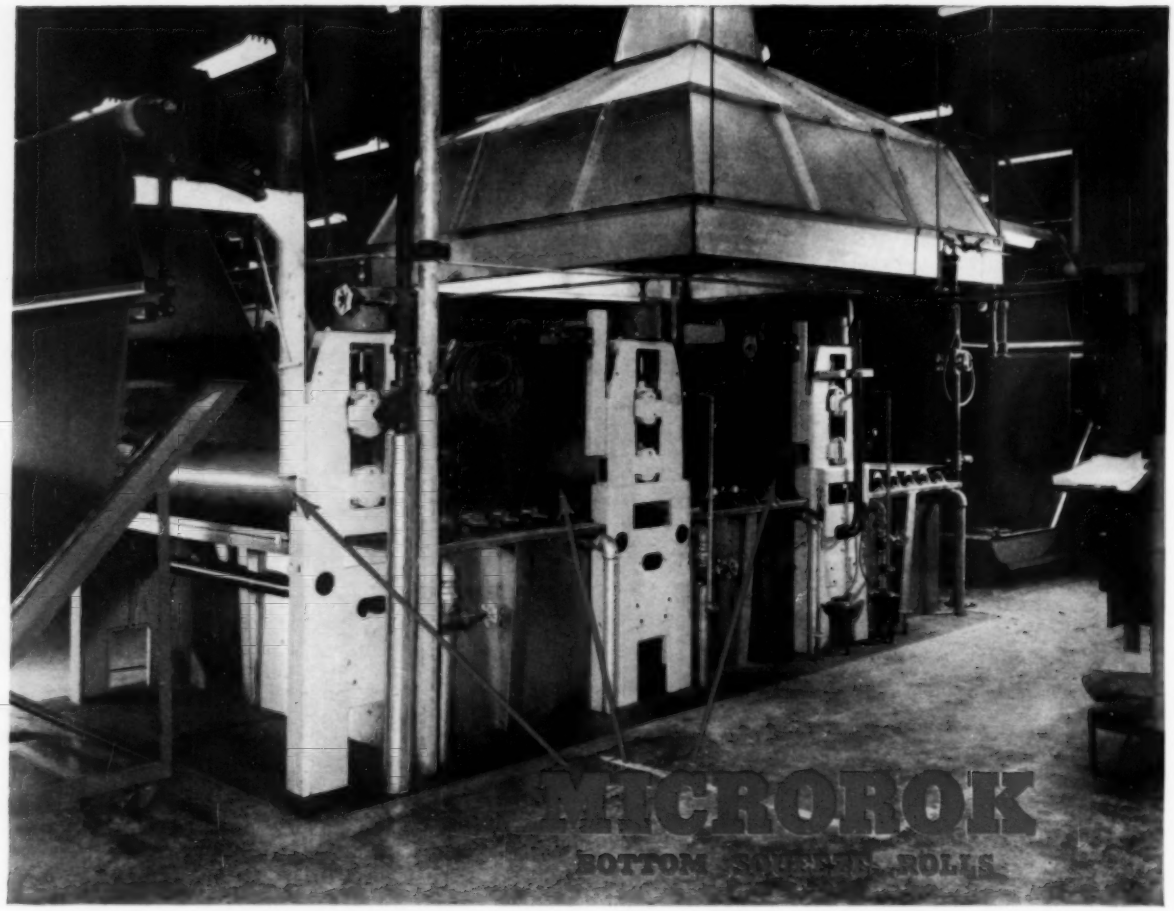
The cooking kettle has a capacity of 250 gals., and each of the storage kettles holds 375 gals. of finished size. A piping system of all-copper pipe is arranged so that size from either kettle can be pumped into the size applicators of either slasher.

Size in the storage kettles is held at a temperature of 200° F. The temperature is raised to 205° in the size applicators. Three-tiered racks for horizontal storage of beams and an overhead convevor with electric hoist make doffing, handling, and storage of beams easy.

Arkwright Mills' two slashers are producing all the sized warps needed by the mill's looms without operating at the maximum speeds of which they are capable. If a plan, now being considered, of changing to 40-in. section beams is carried out, it is possible that one slasher will be enough.

SIZE COOKING and storage equipment is all-new stainless steel and copper. Water-flow meters are in left background.





. . . for years of service without maintenance

Check THESE ADVANTAGES:

- Long life . . . runs for years without grinding.
- Chemical and corrosion resistant . . . not affected by chemicals used in carbonizing, crabbing and other finishing operations.
- Firm cover bond . . . no loosening due to uneven expansion of cover and core as with metal rolls.
- Easily ground in the mill if necessary.

Microrok Bottom Squeeze Rolls offer textile finishers a solution to the maintenance problem of hard-to-get-at bottom squeeze rolls. In carbonizers, padders, mangles and crab machines as pictured above, they have outperformed all others whether rubber or metal. Just how many years these rolls will run between grindings is not known. Microrok rolls are running where they have been in continuous operation for periods ranging up to five years with no appreciable loss of crown . . . insuring uniform extraction from selvage to selvage.

Microrok's firm cover bond remains intact under conditions of expansion and contraction which occasionally cause loosening of metal jacketed rolls. Microrok's unusual chemical and corrosion resistance eliminates pitting, electrolysis and other causes of premature deterioration. Ask your Stowe-Woodward Sales Engineer how Microrok Bottom Squeeze Rolls can help you to improve quality and increase profit in your plant, or write for Bulletin 101.

Complete roll processing plants at:
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Craftsmen in rubber
RUBBER ROLLS with a REPUTATION

THE TROUBLE SHOOTER AT WORK—

How One Mill Stopped THICK PLACES in Yarn

• A quality-goods cotton mill was having trouble with thick places in yarn. A trouble shooter was called in, and he recommended a special knock-off motion at the slubbers to reduce drawing waste and put the proper number of layers on roving bobbins.

• Here's how his plan worked out—

By **E. H. HELLIWELL,** Contributing Editor, TEXTILE WORLD

A QUALITY-GOODS COTTON MILL was having trouble caused by thick places in the yarn. These imperfections eventually were traced to the drawing piecings at the slubber. The mill was using dump-piece cans on the end spindles of the long-draft slubbers, and the roving produced on these spindles was used as single roving at the spinning frames.

Orders were issued for all partial doffs left in the slubber cans to be returned for reworking at the finisher drawing. It was necessary to provide an extra operator to take care of these pieces and a special finisher drawing frame to rework them. Special drafting was required because of the difference in the weight of the breaker drawing used on the regular finishers and the returned finisher drawing.

This arrangement reduced the thick places in the yarn, but it was unsatisfactory in several ways. The major objections were increased labor cost, reduced drawing production, and variation in the processing behavior of the reworked drawing.

A close check and weighings of partially full cans left at the slubbers showed a wide variation in the amount of sliver from can to can. Full-can weight tests made on finisher drawing frames proved that excessive differences occurred between frames equipped with coiler-plate stop motions.

It was then decided to equip all finisher frames with full-can yardage stop motions. These stop motions gave close control of the yardage in each can and reduced the variation in the net weight of sliver in individual cans at the slubber creel.

But even with better control of yardage in the drawing cans, the battle was only half won. The amount of drawing left in individual cans was more uniform, but at times the quantity was excessive. The variation was now in the weight of the bobbins doffed and not in the weight or yardage in the can.

A trouble shooter was called in, and he ran a number of quality tests. His experiments proved conclusively that the position of the knock-off wedge on the cone-rack and the placement of the builder jaws could not be depended on to give uniform bobbins from doff to doff. Every change in the tension gear or movement of the rack changed the bobbin size when the frame knocked off for doffing.

The trouble shooter pointed out

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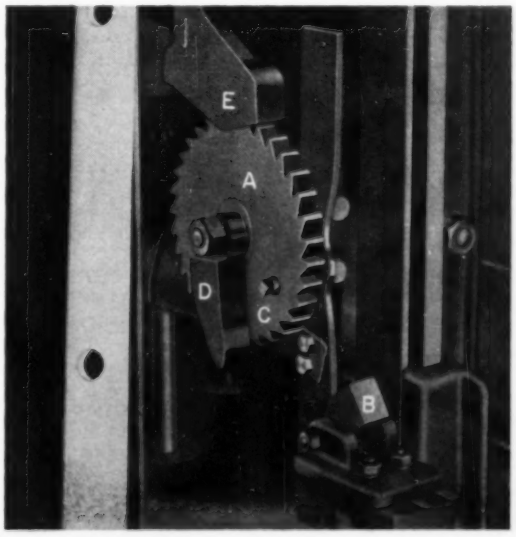


FULL-BOBBIN STOP MOTION for a roving frame works this way:

Ratchet gear *A* controls the number of layers on the bobbin. Each tooth produces one complete traverse or two layers of roving.

Pawl *B*, pivoted on the stand that is attached to the rail guide, moves up and down with the rail. It is inoperative on the upswing; on the downswing the pawl moves the ratchet gear forward one tooth.

Pin *C* carries the knock-off finger *D* around in its movement until the finger lifts knock-off lever *E*, which releases the shipper weight and stops the frame.

The finger then falls forward out of contact with the pin, and the stop motion is in position without having to be reset. The frame is wound back and made ready for the next doff.

PUT MORE SLIVER IN THE CAN

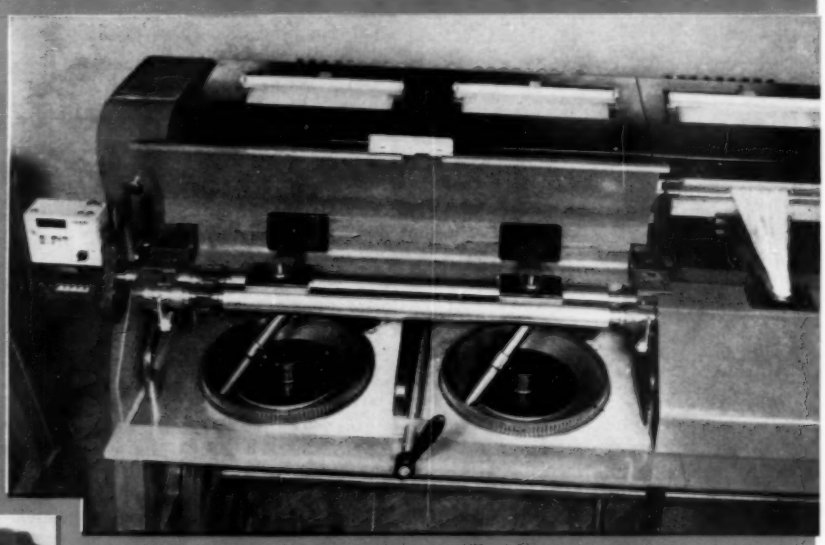
WITH *NEW* SACO-LOWELL "BIG" COILERS

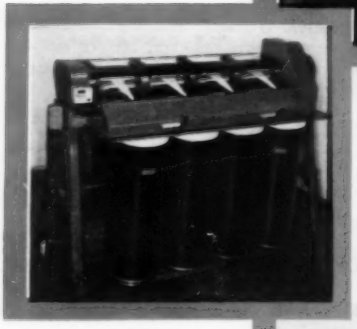
FOR DRAWING

OBTAIN LONGER CONTINUOUS RUNNING TIME,

CUT YOUR LABOR COSTS AS MUCH AS 30%,

REDUCE DOFFING AND CREELING COSTS.





Saco-Lowell has taken another major step toward improving mill profits by expanding even further, our "large package idea". For drawing, we now offer as a CONVERSION up to 16" DIAMETER COILERS ON 18" GAUGE FRAMES and up to 15" COILERS ON 16" GAUGE FRAMES in both 36" and 42" can heights.

These "Big Coilers" feature the patented COMPOSITE TUBE GEAR DESIGN which prevents snagging of fibers or "tagging"; an overcenter lay which produces a more uniform coil pattern and puts maximum amount of stock in can; and virtual elimination of reworkable drawing sliver waste. In addition, they operate smoothly and cleanly at high speeds, require minimum maintenance and lubrication, maintain highest quality sliver.

Put your mill on a low-cost, higher profit basis with new improved Saco-Lowell machinery — discuss your problems with the nearest Saco-Lowell Sales Office.

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How Well Do You "Communicate"?

- The term "communications" has been used so much that it has lost the sharp edge of its true meaning
- Here's a reminder of the practical, day-to-day significance of the word to busy supervisors

By M. A. CROSS, Director of Industrial Relations, Dan River Mills, Inc.

There are styles and fads in the art of management, just as there are in the business of designing and producing women's clothes. Currently very much in style and a source for much discussion at the management conference table is "communications." A whole breed of experts has appeared on the scene to advise and counsel with management on the need for and the techniques of communicating with employees.

But concern with communicating with workers is nothing new for the foreman or supervisor. It is a problem he has always wrestled with and that will forever be with him. He may never have thought of it in the high-sounding term of "communications," but there was never any doubt in his mind that somehow, someday he had to "get through" to the people who work for him.

Webster defines communications in several ways. It is the act of imparting or conveying information or messages, but it is also the interchange of thoughts or opinions. In industry too often the emphasis has been on the former; too often there has been inadequate attention to the interchange of thoughts and opinions.

To evaluate how good a job you're doing on communicating, you might examine your performance in the light of the following standards:

1. You've Got To Listen

Some of the nation's leading advertising agencies have started to employ a technique called motivational research. The objective of this research is to try to establish in a scientific way the factors that affect and influence people in their decisions to buy. With this knowledge in hand, an advertiser is greatly aided in appealing to those factors that result in "buy now" decisions.

Much remains to be done to define motivational research as a wholly dependable technique, but the point is that advertising agencies and their clients are attempting to find out why we buy what we buy so that they may woo us accordingly. In a very real sense, they are "listening" to what we say and think so that they can communicate to us, through advertising, more effectively.

The supervisor has no research staff to conduct elaborate surveys for him, but he does have the problem of finding out what his people are saying and thinking. He has this problem with each individual worker, and he has it as well with the group whose work he directs.

The tool he uses to obtain answers is his ability to listen, to hear what the other persons has to say, and to sense what goes unsaid. The success with which he exercises this ability will directly affect the success of his communications. The information he conveys, the words he uses, the timing will all be selected more wisely if he has listened well.

2. You've Got To Be Consistent

That is, the supervisor must be consistent in the sense that he makes communications a day-in, day-out process. I don't know if anybody has ever attempted to chart the volume of communications with employees; but if it were done in most companies, it would probably show peaks of activity at times of crisis, with great gaps in between.

The familiar pattern is that little is said until something goes wrong. Then meetings are held, decisions reached, and verbal and written messages vastly increased until the crisis is over and things settle down to their normal course. There will always be events that call for extraordinary action, but the chances are that they will be met more calmly and more effectively if the supervisor has been doing a good job of keeping his people informed.

Take the matter of safety as a case in point. There are supervisors who "talk" safety every day. As they walk the job and note conditions or practices that may be hazardous, they call them to the attention of employees. They point out the hazard, explain the danger, show how it can be corrected. It is done quietly, with no fuss; but it is effective in making employees conscious of their safety. It is day-in, day-out communications that reduces the possibility of crisis.

How much better that approach is than one of overlooking safety—the quill on the floor, the empty coke bottle in the alley, the oil spills, the employee who lifts with his back instead of his legs—until there is a serious accident and then, but only then, raising a hue and cry about the importance of safety and keeping that at a fever pitch until some other event calls for special attention.

Communication is not a spigot to turn on and off; it is something that should flow continually.

3. You've Got To Be Believable

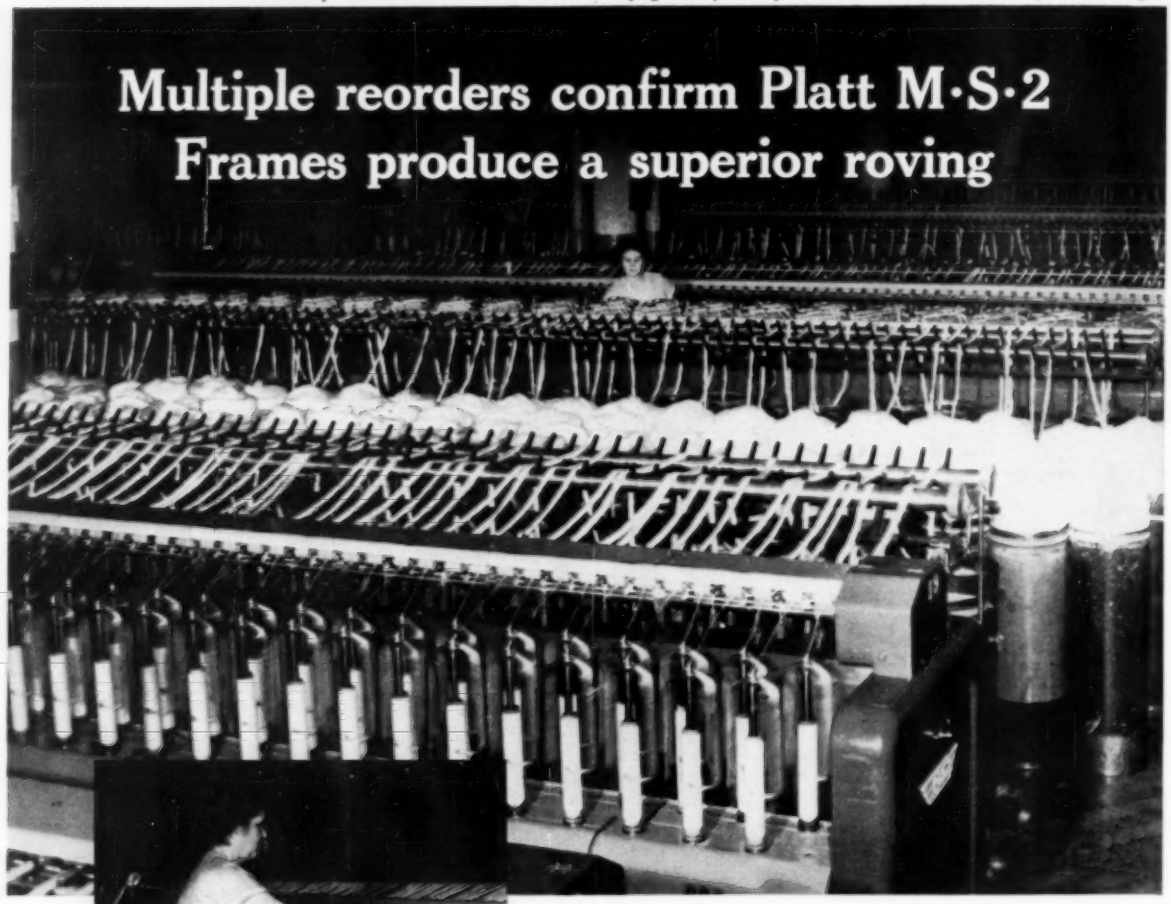
Everybody remembers the ancient fable of the boy who cried "wolf." What happened to him? You will recall that no aid was forthcoming when he really needed help because he was no longer believable.

It may be true, as P. T. Barnum, the great showman, is reputed to have said, that a "sucker is born every min-

CONTINUED ON PAGE 194

More spindles are concentrated in any given floor space with Platt's exclusive frame design.

Multiple reorders confirm Platt M·S·2 Frames produce a superior roving



EXCLUSIVE SAFETY FEATURE: Low frames are easy to operate and cannot be inadvertently started with any guard open.

PHOTO COURTESY OF AMERICAN THREAD COMPANY

The fourth installation in three years expresses the high regard this major American mill has for Platt Roving Frames. These streamlined frames produce an even, non-stretched roving of superior quality. Vibration and sound have been cut to a minimum. This smoother operation increases the frame's life. The more even roving means fewer ends down in spinning. Before purchasing any new frames we invite you to write for information on these efficient frames manufactured by the world's largest maker of textile machinery.

ATKINSON, HASERICK & CO., INC.
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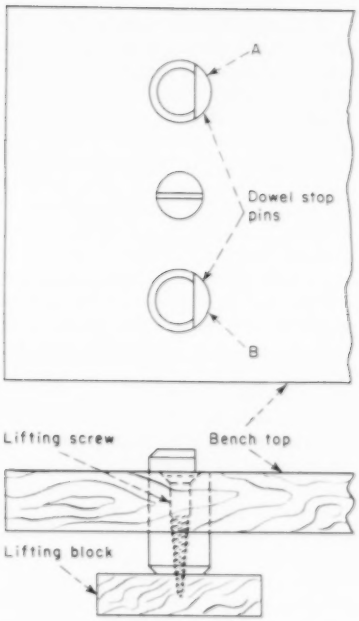


Dowel Pins Make a Safe Stop To Plane Sides of Boards

A wooden bench stop to be used when the sides of a flat board are planed with a hand plane is better than the bent spring with a saw-toothed end that is usually used. And the bench stop can be used with boards of any thickness.

To make the stop, clamp a small piece of board on top of your workbench with one edge at a right angle to the side of the workbench. Use the board as a guide and bore two holes in the workbench for 1-in.-dia. wooden dowel pins *A* and *B* as shown in the sketch.

Cut two dowel pins 1½ ins. longer than the thickness of the top of the workbench. Cut a flat surface on one end of each pin. Then tap the dowel pins through the top of the holes with the flat-cut end up. The pins should be a tight fit.

Bore another hole in the top of the workbench halfway between the two dowel pins. Place a large wood screw into this hole, and screw the end into a wooden block held under the dowels at the bottom of the workbench top. The block must be long enough to cover both dowels.

To use the bench stop, drive the dowels down to ¼ in. below the thickness of the board being planed and place the end of the board against the flat surface of the two dowels.

If you should accidentally hit the stop with your plane, the plane will not be injured.

To remove the dowels, just turn the screw in the block and the dowels are forced up through the workbench top easily. (K-3289) *Walter A. Simond, Washington, D. C.*

How To Taper a Paintbrush For Painstaking Work

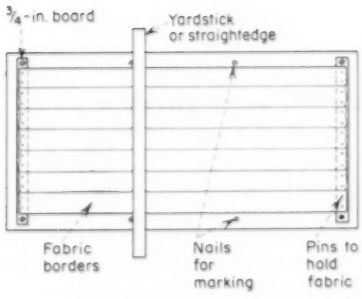
When window sashes or other objects calling for painstaking work are to be painted, a paintbrush tapered to a point does the job best.

A good way to taper a paintbrush is with flour, water, and plaster of Paris. Mix the flour and water, and add 5% plaster of Paris.

Dip the brush in the paste until it is thoroughly saturated. Then remove the brush and let it dry.

When the brush is dry, rub it over a course sheet of sandpaper tacked to the top of a workbench.

Wash the dried paste out of the brush with water, and the brush is ready to use. (K-3657)



Here's an Easy Way To Mark Knitted Borders

We had a problem in marking knitted borders so that the operator could easily follow the marks. We solved the problem with a marking board made from a sheet of 48x24x⅝-in. plywood. The size of the board can vary according to your requirements.

To make the board, a ¾-in. strip of wood is screwed along both ends of the plywood board. Nails are hammered in these boards at 1- or 1½-in. intervals so that the pointed ends project through the board. More nails are placed in the top and bottom of the board where the borders are to be marked.

The fabric is then laid on the board, a yardstick is laid over the nails, and a piece of chalk is run over the yardstick to mark the borders. (K-3570) *A. F. Corvetti, New York, N. Y.*

Different-Color Filling Shows Up Weaving Faults

We weave high-quality woolen and worsted fabrics and must keep a close check on weaving faults. We've found a very easy and effective method in checking the cloth in each piece.

At the end of the cloth, the weaver puts in a shuttle with a contrasting color bobbin and weaves about three inches of cloth. We find that using black filling for white warps and white filling for colored warps shows weaving faults clearly.

We also find that it pays to run this contrasting stripe when a new warp is started. The black filling should be washfast to avoid staining the cloth. (K-3173) *Henryk Eiger, Tel-Aviv, Israel*

December Prize-Winning Kink

The best Kink published in the December issue of TEXTILE WORLD, according to our reader-judges, was:

"Machine To Match V-Belts Makes Old Belts Last Longer"

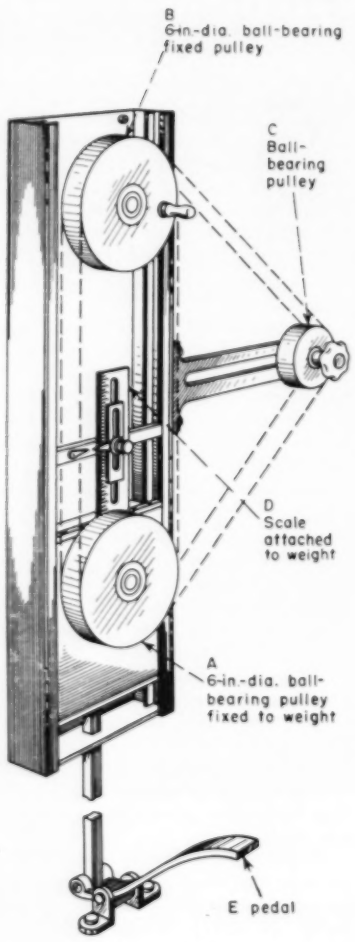
A. J. Redmond
Gastonia, N. C.

Mr. Redmond is being sent a check for $25 with the compliments of TEXTILE WORLD.

The prize-winning Kink is reprinted at the right.

Each month TEXTILE WORLD awards $25 to the submitter of the Kink judged by a panel of over 300 mill men as the best for that particular month. A new batch of Kinks appears each month, and a new group of readers acts as judges each month.

If you are asked to judge one of these days, be sure to help select the best Kink by sending back your answers in time for final tabulation. Closing date for judging is the last day of the month in which the Kink appears.



Machine To Match V-Belts Makes Old Belts Last Longer

A homemade machine to match V-belts lets us use miscellaneous old A, B, and C V-belts with as good results as we receive from new ones. The machine shows any variation in length and stretch, and consequently matched sets of belts make each belt carry its part of the load.

The machine is made from a 3-ft. length of 6-in. channel iron and is bolted to a wall or post in the mill.

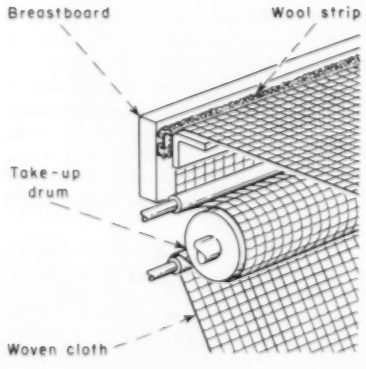
The accompanying sketch shows the machine with its working parts. To test a belt, the foot pedal *E* is mashed and the first belt is put on the pulleys *A* and *B*. For long belts, pulley *C* is used also and it is adjusted to pull the belt taut.

The positions of long and short belts are indicated by the dotted lines in the sketch. Pulley *A* is attached to the machine by guides. It has a 20-lb. weight at its back side. When the foot pedal is raised or lowered, the pulley moves up and down in the guides.

This pulley and weight apply pressure to a belt being tested and indicate the over-all length and stretch of the belt at the scale-and-pointer device *D*.

All other belts to be used in the same set are matched so that the pointer indicates the same position.

The machine is very accurate and never needs maintenance attention. (K-3635) *A. J. Redmond, Gastonia, N. C.*



Sheepskin on Breastboard Protects Cloth From Dirt

A 1-in. strip of sheepskin tacked to the breastboard will keep particles of dirt and other objects from falling onto the take-up drum of the loom.

The strip should be fastened full length across the inside of the board. In addition to catching dirt, the strip will prevent weavers' hooks, loom parts, and other objects from damaging the cloth or drum covering. (K-3231) *H. E. W. Berwick, Pa.*

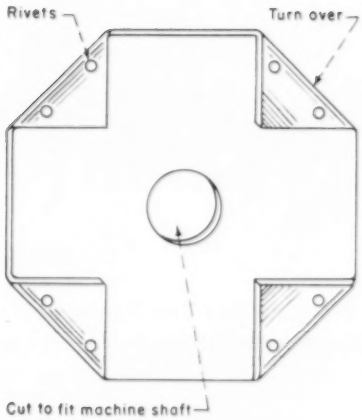
Lathe-Center Graphite Keeps Warper Bearings Free

On our VWR warpers, the brake-end bearing sleeves had a tendency to freeze on the shaft when they were assembled dry.

Regular oil and grease did not seem to help much.

Finally we tried lathe-center graphite on these parts, and months later the bearing sleeves could be removed easily.

There probably are many other uses for this type of lubricant on warpers and spoolers where parts have a tendency to freeze. (K-3086)



Nonweaving Warp Thread Prevents Drag-ins

On our W-3 looms, we sometimes use high-twist filling in weaving woolen and worsted specialties. Drag-ins caused by snarled filling yarn used to give us a lot of trouble.

We solved the problem by tying a warp thread to the eye of a heddle on Harness No. 1 weaving two-by-two twill. The heddle was placed near the end of the harness so that it would be as near the boxes as possible.

The thread was drawn through the reed and tied to the breastbeam. We then positioned the shuttles so that when No. 2 box was at race level, harness No. 1 would be up and when No. 1 box was at race level, Harness No. 1 would be down.

When the shuttle from Box No. 2 was weaving two picks, the thread was up and did not interfere with weaving. When Box No. 1 came to race level, the thread was lowered and held the filling tight for two picks. Thus, the end did not weave in but only held the filling from Box No. 2 tight so that it would not be dragged in. (K-3174)

Henryk Eiger, Tel-Aviv, Israel

Keep Sewing-Machine Operators Cool

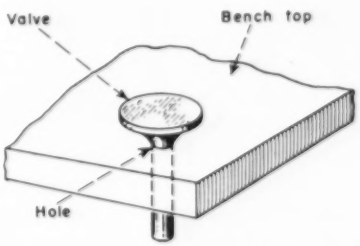
A square sheet of $\frac{1}{8}$-in. thick rubber makes a good fan to put on the handwheels of sewing machines to keep operators cool during hot days

Cut the rubber about 6x6 ins. Turn the corners in 45° and rivet them in position. Then cut a hole in the center of the rubber, and mount the fan on the outside of the handwheel. (K-3711)

Engine Valve Makes a Good Anvil

We do a lot of work on small parts of knitting machines in our shop. A discarded truck valve was found to be very useful for working with these small parts. It is used as an anvil.

We drilled a hole close to the edge of the workbench to take the stem of the valve. The valve is dropped in place in the hole when required, and it is easily removed when we need to do other work. (K-3692)



$500 for Best Kink in 1958 - - - $25 for Best Kink Each Month

Plus $5 to $10 for Every Kink Accepted

What Is a Kink?

Any idea that will

- Cut costs
- Improve quality
- Reduce work
- Increase production
- Make work easier

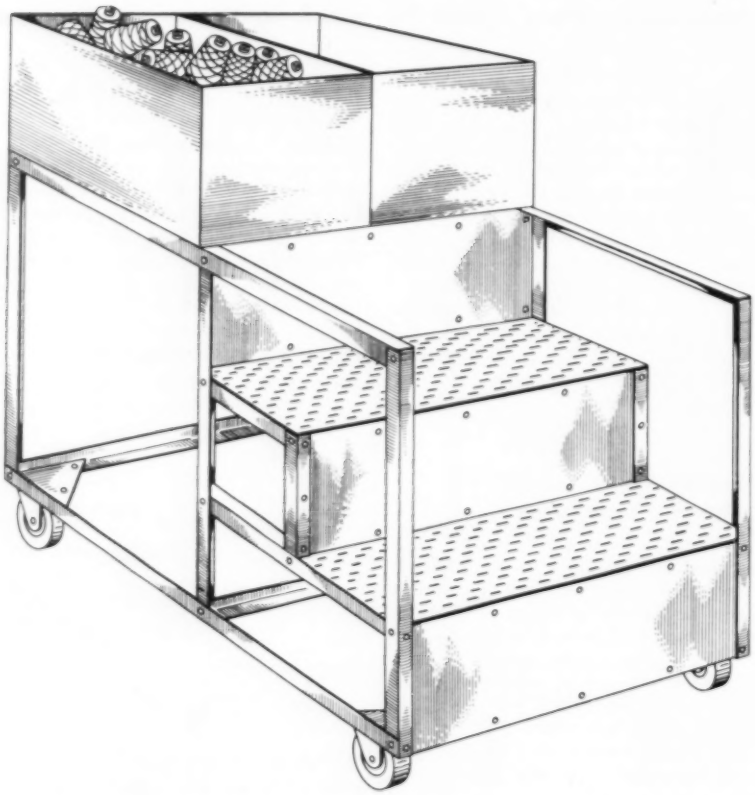
The idea may be one for improving machines, some attachment for a machine, a short-cut way of doing something, a labor-saving device—any idea at all that helps a mill man run his job better or easier.

Send in your Kink now. There is always a contest going on.

RULES OF CONTEST

1. No limit to number of entries.
2. New $25 prize contest every month, $500 prize contest for the year. Monthly contest confined to Kinks published that month, yearly to those published in calendar year 1958.
3. All Kinks paid for on acceptance; extra payment for photographs. Drawings need not be finished (clear detailed pencil sketches will do).
4. Previously published material not eligible for prizes.
5. Unless you advise to contrary, we assume we may sign your name to Kink when published.
6. Prize winners will be selected by readers, a different group each time. At least 300 will be asked to select preferred Kinks in each issue. Their votes will select the best Kinks, and their decision will be final. In cases of ties, duplicate prizes will be awarded.

Send Kinks to:
KINKS CONTEST, TEXTILE WORLD
201 E. Coffee St., Greenville, S. C.



Storage Ladder Speeds Knitting-Machine Changes

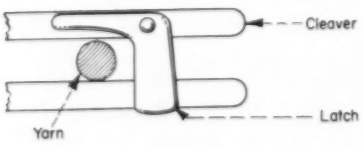
Changing cones on automatic striper machines takes a lot of time, especially when different styles are made on the same machine.

We made a ladder for doing this job, and it has saved us lots of machine downtime.

The ladder is a stepladder on wheels that lock when weight is placed on them. We added a divided container on the top step to hold cones of yarn.

When the yarn on the machine has to be changed over, the operator puts the new yarn in one compartment of the container. The other compartment is left empty.

The operator mounts the steps to remove the old cones and puts them in the empty compartment. She then replaces the empty cone holder with a new cone from the full-container compartment. (K-3185)

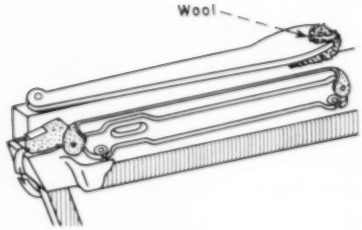


Latch Holds Yarn In Winder Clearer

Yarn wound on cones or cheeses at high speeds and low tension used to jump out of the open end of our winder clearers. This action caused loops or bunches that gave trouble in later processes.

We solved the problem by making a latch that closes the open end of the clearer while the yarn is being wound. The latch, attached to a pivot as illustrated, has a vertical leg that is heavier than the horizontal leg. The heavy leg drops to the closed position after the clearer is threaded.

Since equipping our winders with this latch, we have had almost no loops or bunches to get past the clearer and into the work. (K-3684)



Wool on Box Top Forces Yarn Into Shuttle Eye

Sometimes the filling yarn does not thread into the shuttle eye correctly on the first and second picks after a filling transfer. A piece of wool or fur glued to the left shuttle-box top will force the yarn down into the slot of the eye as the shuttle comes to rest in the box. The second pick will then complete the threading process. (K-3605) *David L. Garrett, South Boston, Va.*

Use an Electric Battery To Remove Broken Taps

When a tap breaks off flush with or below the surface of a casting or forging, it can be removed easily. Just cut a slot in the tap for a grip for another tool.

The slot can be cut with an electric arc. Use a 6- or 12-v. battery and connect one pole to the casting. Connect the other pole of the battery to a thin electrode. Use this electrode to cut the slot in the tap.

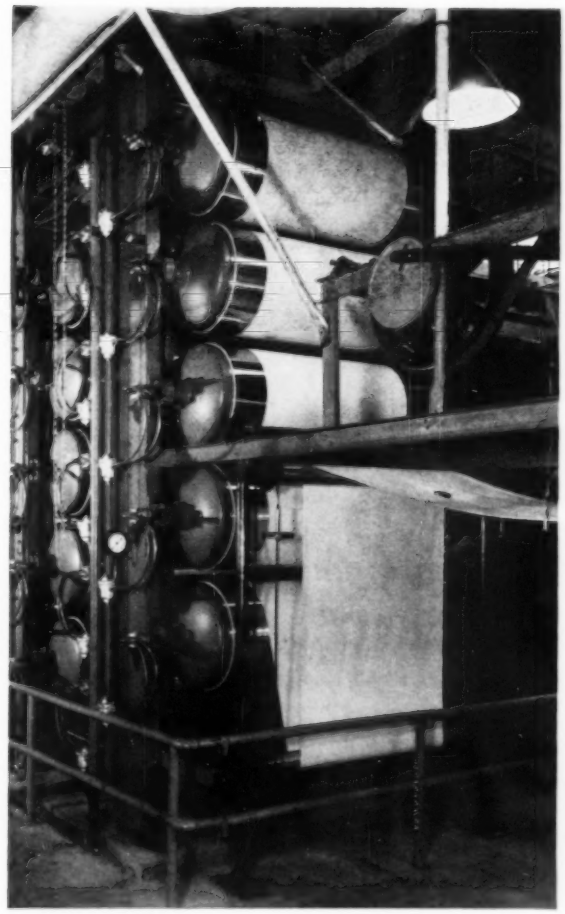
Then use a screwdriver and hammer to drive out the broken tap. Broken studs and screws can be removed in the same way. (K-3350) *W. E. Warner, Essex, England*

Short Circuits in Motors Show Up in the Cables

When motors in production stop running, the trouble is often a break in the lead-in cable. If the break is in the end of the cable, it is detected easily with the eyes. But breaks inside the cable causing short circuits are hard to find.

These breaks can be found quickly if you start at the end of the cable and bend it back and forth with a sensitive movement throughout its length. If there is a weak or broken place, you will detect it. (K-3222).

How Stainless Steel Cloth Drying Cylinders Help Save Fuel



Fabrics stay spotless in this system of cloth drying cylinders made from Armco Stainless Steel. The system is at the Renfrew Bleachery, Travelers Rest, S. C.

Cloth drying cylinders made of Armco Stainless Steel conduct just enough heat to do an efficient drying job. They don't waste heat. You don't waste fuel.

Cloth stays clean, too, because stainless cylinders resist rust and discoloration—are easy to keep bright and free of dirt. What's more, the strength of Armco Stainless Steel provides extra resistance to high pressures, and its hard surface guards against denting and scratching.

Armco Stainless Steels are widely used in many kinds of textile processing equipment because of their uniformly high quality. Grades are available for practically every purpose, in sheet, strip, plate, bar and wire.

If you or your equipment fabricator would like to know where you can buy Armco Stainless Steels for textile machinery, just fill in and mail the coupon. There's no obligation.

Other Armco Steels for top-quality textile equipment include ALUMINIZED STEEL, ZINCGRIP®, and ZINCGRIP PAINTGRIP®.

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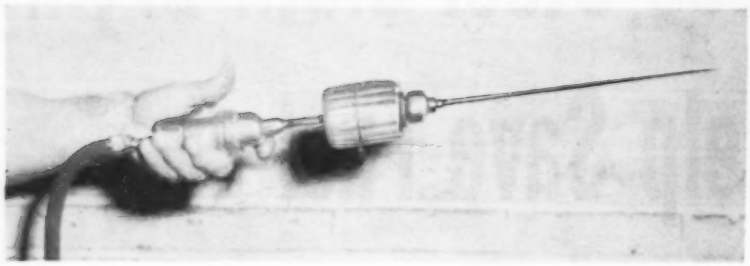


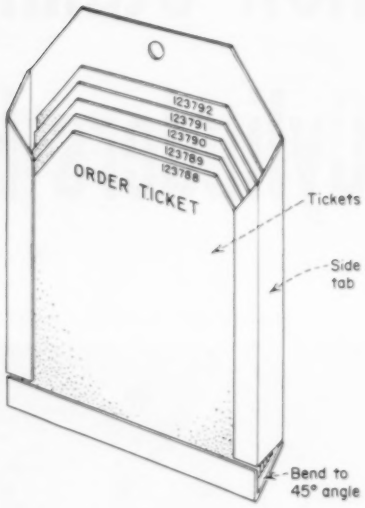
Screwdriver Speed Reducer Adds Power to Roll Picker

We use mechanical roll pickers in our mill for cleaning drafting systems. The commercial picker we use worked fine most of the time; but occasionally it would become overloaded with heavy, hard-to-remove waste and run too slow to be effective.

We solved the problem by adding to the picker drive a screwdriver speed reducer (arrow) from a ¼-in. power drill. The reducer slows speed and gives enough extra power to pick the toughest waste from any kind of roll.

Now we no longer have to lay aside the mechanical picker and pull out waste by hand.

We find that modified picker is especially useful for cleaning comber rolls. (K-3523) *Parkdale Mills, Inc., Gastonia, N. C.*



Use a Holder To Check Order Tickets Quickly

We have made holders for our order tickets that hang on the knitting machines. The holders are simple to make, save lots of time, and can be used on any textile machine.

Make the holder from galvanized iron or other metal plate that is easy to bend. Cut the holder to the size of the tickets you use, but allow an extra 2 ins. on the bottom and an extra 1 in. on each side. Bend this extra 1 in. at the sides toward the center to form the sides of the holder. Bend the bottom tab at a 45° angle to the base, as shown in the sketch.

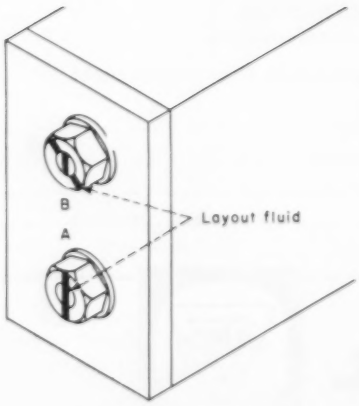
Drill a hole at the center of the base near the top of the holder, and hang the holder on a convenient part of the machine with a screw. The inclined bottom tab will allow you to see easily the tops of individual tickets, and you won't fumble to get them out of the holder. (K-3375)

How To Repair Shuttles With Liquid Metallic Solder

Metallic solder that can be purchased in tubes at any 5&10-cent store is useful for repairing some shuttle defects. When a shuttle eye does not fit tightly and there are small cracks or openings around it into which the filling can be drawn, the solder can be used as a filler.

Use a thin strip of wire to press the solder into cracks or other defects in the shuttle. The solder is quick drying, and the shuttle can be put back in service quickly.

The hardened solder has a smooth finish; and if the right amount has been applied, there is no need of filing or sanding it. (K-3383) *H. E. Wenrich, Berwick, Pa.*



Layout Fluid on Bolts Shows Loose Machine Nuts

Nuts for machines that vibrate severely in service must be tightened periodically. This tightening takes a lot of time and is hard work. And nuts that are tight have to be checked the same as loose ones.

Where nuts are clearly visible, loose nuts will show if they are painted with layout fluid diameterically across the nut and the bolt end as shown at *A* in the sketch.

After the machine is back in operation, nuts that have come loose will show as at *B* in the sketch. Then the loose nuts can be retightened to the correct positions without wasting time with nuts already tight. (K-3583) *Clifford T. Bower, London, England*

Paint Loom Lays White To Aid Drawing In

When you are weaving cloth from dark-color yarns, it is hard to see the reed openings. Painting the race plate in front of the reed and the reed bed back of the reed with white enamel will be a big help.

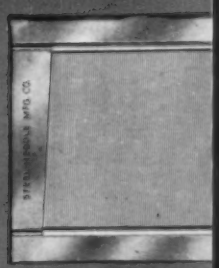
This white surface not only will make it easier to see the dark warp ends but also will reflect light onto the reed. (K-3060) *A. F. Berwick, Pa.*

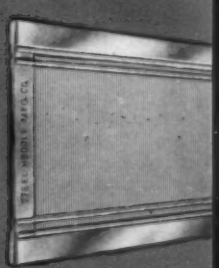
HERE AT LAST

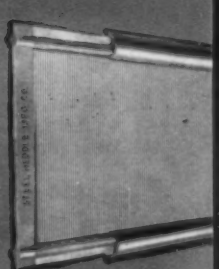
the reed you need!

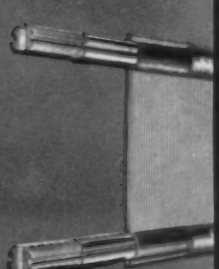
FROM **Stehedco**

INTRODUCING FOUR NEW *Quality* LOOM HARNESS REEDS









ANGLE DENT REED

This reed prevents streaks by keeping every thread evenly spaced. Available in pitch band or all-metal construction.

LOOSE SPRING REED

The addition of loose springs gives dents more rigidity, acts as a cushion, and insures most accurate dent spacings. Eliminates reed marks and dent breakage. Pitch band or all-metal.

RIGID METAL REED

A long term investment in quality weaving where maximum strength and perfect dent spacing are important.

RIGID PITCH REED

A half-round metal band covers each wood rib, making this reed 100% stronger than an ordinary pitch band reed and better able to withstand hard usage.

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THE PROOF OF A GOOD REED IS IN THE WOVEN CLOTH

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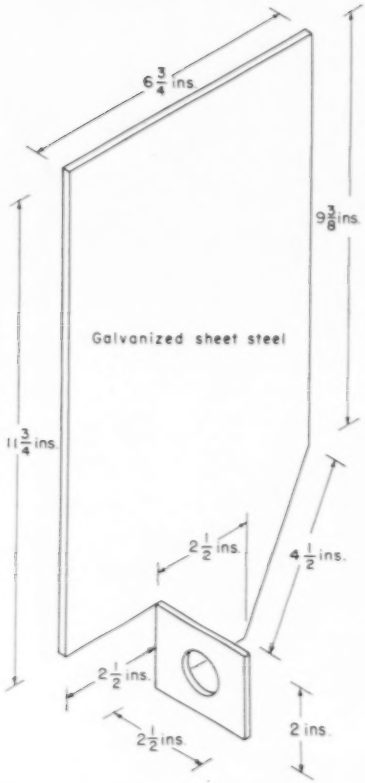


Guard Keeps Thread Out of Loom Take-up

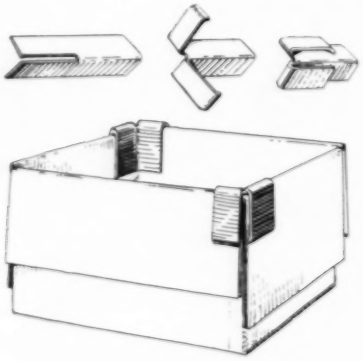
Filling ends dropping from the thread cutter on W-3 looms often clog the gear, sprocket, and chain that drive the cloth roll.

We installed guards made of galvanized sheet steel on all of our looms. The guard is cut out as shown in the sketch and bolted to the brace for the take-up stand on the drive end of W-3 looms. (K-3669) *Archie Darnbrough, Esmond, R. I.*

Reduce Knitting Waste With Mirrors

Knitting faults on rib or links-links knitting machines become visible only when about 1 yd. of fabric has been knitted.

To eliminate this waste, fix a mirror on each side of the machine so that the operator can see the fabric still inside the machine. Attach the mirrors to the machine uprights so that the mirrors can be adjusted to cover all of the fabric. (K-3706) *Ben Singer, Raleigh, N. C.*



Make Clamp from Angle Iron To Keep Box Flaps Open

In our throwing plant, we used to have trouble keeping the flaps on carton boxes open while we were packing or unpacking them.

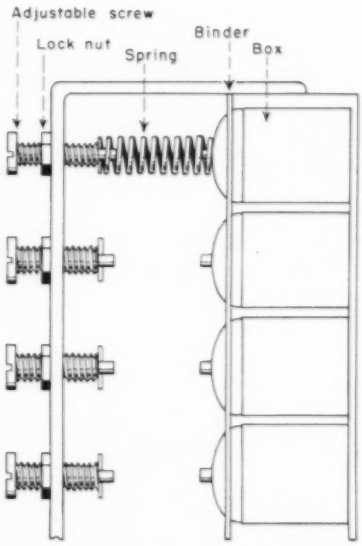
To eliminate this nuisance, we made some clamps from ☆x1¼x4-in. angle iron that are fitted over the box corners. The iron is cut 2 ins. down the center at the angle, and the ends are bent over as shown in the sketch.

Only two units are needed per carton since each clamp holds down two sides. (K-3717) *J. S. Rapasch, Columbia Tape Mills, East Greenville, Pa.*

Use Masking Tape To Pick Up Glass Particles

Occasionally, glass from a broken fluorescent tube falls onto the cloth or warp on a loom. It is hard to remove all of these glass fragments without personal injury or damage to the cloth.

A simple solution is to take pieces of masking tape and press the sticky side against the cloth or warp. The fragments of glass adhere to the tape, which is then discarded. (K-3232) *H. E. Wenrich, Berwick, Pa.*



Try This Spring Arrangement On Your Loom Binders

We had some trouble with the binder springs on our box looms. Finally, we found a solution by replacing the original springs with the arrangement shown in the sketch.

A U-shape piece of flat iron was welded to the top center of the shuttle-box cell with a hole in the other end to fit the box lever. Four holes in the U-shape piece correspond to holes for the binder screws. A special ½-in. screw with nut was placed in these holes. Then a ½-in. cylinder ½ in. in diameter was welded to each tongue where the binder spring formerly pushed.

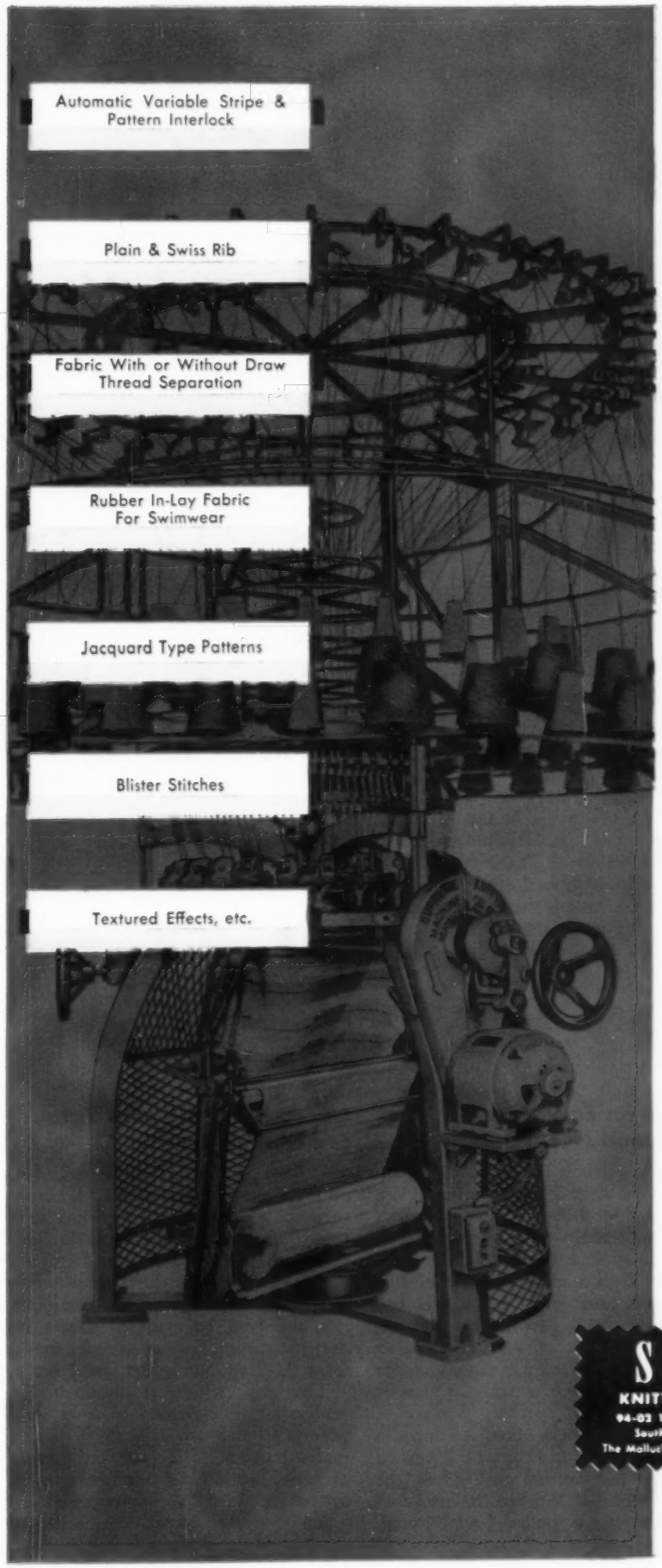
A steel push spring ½ in. in diameter and 2 ins. long was placed on the cylinder and special screw. The screw can be run in or out to adjust the tension of the screw, and the nut is tightened to keep it in place. (K-3641) *Henryk Eiger, Tel-Aviv, Israel*

Rider Pulley Makes Flat Grinding More Accurate

In grinding the flats on our cards, the drum grinder tended to speed up when it was between the flats. This action meant that the grinder was turning too fast when the next flat arrived in place for grinding, and grinding was irregular.

We stopped irregular grinding of the flats by putting a rider pulley on the belt to the grinder. This rider keeps the belt at constant tension and equalizes the speed of the grinder. Our flats move 2½ ins. per min. during grinding, and we set the grinder at 0.005 in.

Since installing the rider pulley, we have been able to grind our flats much more evenly. (K-3719)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• Dual raceway in dial makes possible the production of a tremendous variety of interlock and patterned fabrics with a "birdseye back".

• **Standard 30" diameter model, contains 24 cylinder feeds including 12 individually and automatically controlled four-color striping boxes, 24 three-position pattern wheels and 24 automatically controlled cylinder cams for knit, tuck and welt positions. Knit, tuck and welt positions also available on all dial feeds.**

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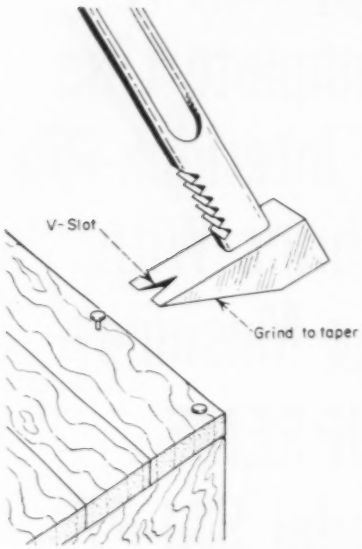


FIG. 1

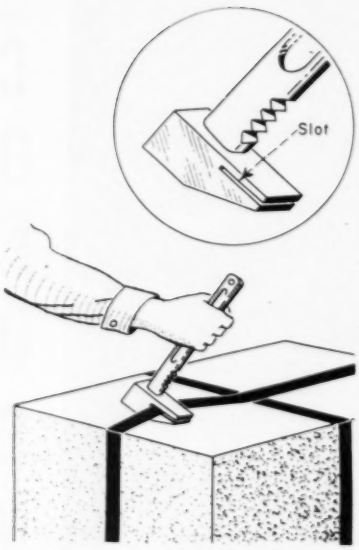


FIG. 2

Limit Switch Reduces Picker-Room Fires

Cotton is blown from our opening room to a fireproof storage room where it remains until required for the pickers. Formerly, when a fire occurred in the opening room, the air pressure from the opening machines and fan would sometimes push the fire through the storage room and into the mill proper if the storage-room door were open.

To keep the fire contained within the storage room, I put a Micro switch on the door and wired the switch so that when the door is opened the opening machines and fan are shut down instantly. This arrangement has kept fires out of our picker room on several occasions. (K-3690) *Henry Blum, Montreal, Que.*

Old Monkey Wrenches Make Good Tools for Packaging

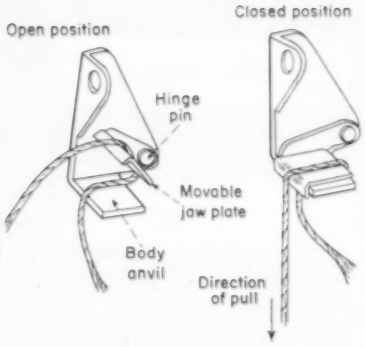
Old monkey wrenches can be used to make tools for packing and unpacking boxes and cartons.

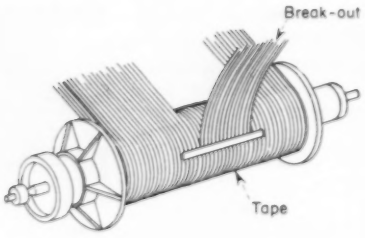
To make a nail puller, remove the adjustable jaw from a monkey wrench and discard the jaw. Grind the fixed jaw to a taper as shown in Fig. 1. Then file a V-slot in the center of the tapered surface.

In addition to pulling nails, the tool also drives light nails.

To make a tool to break steel strapping, saw a slot in the fixed jaw of the wrench parallel to its square surface as shown in Fig. 2.

This slot is slipped over steel strapping; the handle is then given a quick jerk and a twist to break the strapping. (K-3636) *Charles H. Willey, Penacook, N. H.*





Tape Holds Ends Straight While Break-Out Is Mended

Warp ends are often crossed and tangled when a break-out occurs at the loom. If a strip of pressure-sensitive tape is placed on the ends behind the break, the ends will remain in place while the warp is pulled forward. (K-3604) *David L. Garrett, South Boston, Va.*

Here's an Easy Way To Thread Needles

We sew labels on our knitted fabrics with a regular sewing needle. We had trouble threading these needles until we learned to push the needle through a piece of white cardboard.

Only the eye of the needle projects from the cardboard, and the thread is much easier to pass through the eye. (K-3622)

[*Some sewing-machine operators use an easier method, which can also be applied to hand needles. A piece of fine spring wire is bent to form a diamond shape, and the wire is pushed through the needle eye. Then the thread is pushed through the diamond, and the wire is pulled back through the eye with the thread.*—EDITOR]

Clamp Holds Slippery Yarn Under High Tension

Where samples have to be mounted on a tensile-strength tester in a hurry, such as in a sub-zero or high-temperature chamber, simplicity of the jaw or clamp on the tester is essential.

A simple three-part grip that weighs only four grams but has great resistance can be made as shown in the diagram. The parts are made from 0.062-in., or lighter, hard brass.

The grip, which is automatically self-closing, is designed to hold slippery yarns that are difficult to secure under tension. The jaws get tighter as cross sections of materials, such as rubber yarn, are compressed or when tension increases. (K-3650) *A. J. Stubbs, Birmingham, England*

$1400 SAVINGS with DAYTON COG-BELTS*

for Long Shoals Cotton Mills, Inc., Lincolnton, N. C.

"Before switching to Dayton Cog-Belts, we were replacing motor bearings at the rate of one a week and spending $180 a year to have our motors rewound," said Mr. Fred J. Rash, plant electrician for the Long Shoals Cotton Mills. "Belt slippage on three line shaft drives for the carding room was our main trouble. To keep up speed, we overtensioned the belts and resigned ourselves to bearing failures.

"The cost was tremendous . . . amounting to $700.00 a year for new bearings and motor rewinding without adding the cost of over 110 hours of downtime.

"Two years ago we called in the Dayton representative who recommended Dayton Cog-Belts. The principle of raw-edge construction makes good sense, so we tested Cog-Belts on one of the drives. That was the end of our slippage problem.

"In the more than two years since the first installation, we've had only one bearing replacement and absolutely no motor trouble. This means we've already saved ourselves over $1400 in maintenance costs, simply by switching to surer-gripping Dayton Cog-Belts."

Consult the yellow pages of your telephone directory for the name of your nearest Dayton distributor or write, The Dayton Rubber Company, Industrial Replacement Division, Dayton 1, Ohio.

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$43/64$" Face large diameter Conical Ring. An excellent ring for spinning and twisting wool, synthetic and fiberglass yarns for carpeting, tire cord, woolens and novelty weaves.

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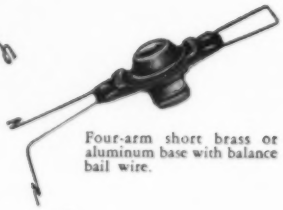

Four-arm short brass or aluminum base with balance bail wire.

Two-arm, light, long aluminum base.

Special Pollywog flyer for tire cord and heavy yarns.

Four-arm long brass or aluminum base

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Do you need help on a technical problem? TEXTILE WORLD is at your service in helping solve problems in yarn manufacturing, weaving, knitting, dyeing, finishing, and other textile operations. A large staff of mill men, consultants, and other experts are available for authoritative answers. Send your problem to the Editor, Questions and Answers, TEXTILE WORLD, 201 E. Coffee St., Greenville, S. C.

Upholstery Backings Are Synthetic-Rubber Emulsions

Technical Editor:

Most fabrics for upholstered furniture are coated on the back with a rubber compound. What are these compounds and how are they applied? (1359)

Backing materials for upholstery fabrics are generally synthetic-rubber emulsions containing accelerators and antioxidants. The accelerators help cure the latices, and the antioxidants retard ageing and discoloration.

The backing varies greatly according to the material to which it is applied. Producers of latices will help you select the backing you require.

The backings are generally applied from a roller coater set up so that the back of the fabric contacts a roll carrying a film of the backing compound. A doctor blade controls the thickness of the coating on the roller, and another doctor blade is used to remove excess material from the fabric after it is coated.

The backed goods pass into a dryer, where excess moisture is removed and the latex is cured. Curing temperatures vary with the latex used, but they run from 290 to 320° F.

How Cocoa Mats Are Made

Technical Editor:

How are cocoa mats made? What type of yarn is used, and where do these yarns come from? (1355)

Fibers used in cocoa mats come from the shell of unripe coconuts. Principal sources of supply are Ceylon and India.

Colors of coir fibers range from cinnamon brown to red brown. The fibers are soaked in fresh or salt water, and the wood fibers are separated from the coir fibers by hand or machine. This process of hackling is done with steel combs, and the fibers are dried in the sun.

Fibers selected for yarn for making door mats must be resilient, stiff, and strong. There are about 125 qualities of coir fiber, but there are no exact standards.

The grade of coir for these yarns determines the grade of finished mat. The best quality is a cinnamon-brown color known as extra brush, the second-best quality is known as medium brush, and the lowest grade is Red Calicut, which is a reddish-brown color.

The back warp yarn is a two-ply yarn about $\frac{1}{8}$ in. in diameter with 6 tpi. The filling is two ply and about $\frac{1}{4}$ in. in diameter with 3 tpi. The two-ply face warp, which forms the brush pile, is about $\frac{1}{4}$ in. in diameter with only 2 tpi.

Braiding yarn for finishing the sides of the mat is two ply. One group of braiding yarn has three ends that measure $1\frac{1}{16}$ in. when braided. Breaking strength of the yarns is 50 lbs. for the back warp yarn and 45 lbs. for the face warp yarn, filling, and braiding yarns.

The weave used in cocoa mats is known as a diamond-back weave and has 11 back warp yarns per 6 ins. and 10 face warp yarns per 6 ins. The brush-pile warp yarns are laid in fours and woven as one. One back warp yarn is woven on each side of each tuft of pile warp yarns; and a filling yarn is inserted after each tuft of pile, which is eventually cut.

The braiding yarn is secured to the edges of the mat with polished cotton twine.

Most mats measure 18x30 ins. and 22x36 ins. They are $1\frac{1}{2}$ ins. thick and weigh about $5\frac{1}{2}$ lbs. and 8 lbs.

How Woolen Yarns Are Handled

Technical Editor:

What are the latest methods of handling yarn in woolen mills? (1352)

Some mills are now using wire-mesh containers to handle yarn. These containers are made in various sizes and are collapsible. They can be stored neatly and take up a small space in a corner of the winding or spinning room.

The containers are of the pallet type. They keep the floors in good condition, and they don't have casters to pick up thread.

A fork lift truck is used to move the containers, which are stacked up four or five high; so they take up little space when they are full.

The containers are generally paper lined to protect the yarn, but polyethylene sheets seem to be doing a good job in some mills.

Metallized-Acid Dyes Are Now Used for Felt

Technical Editor:

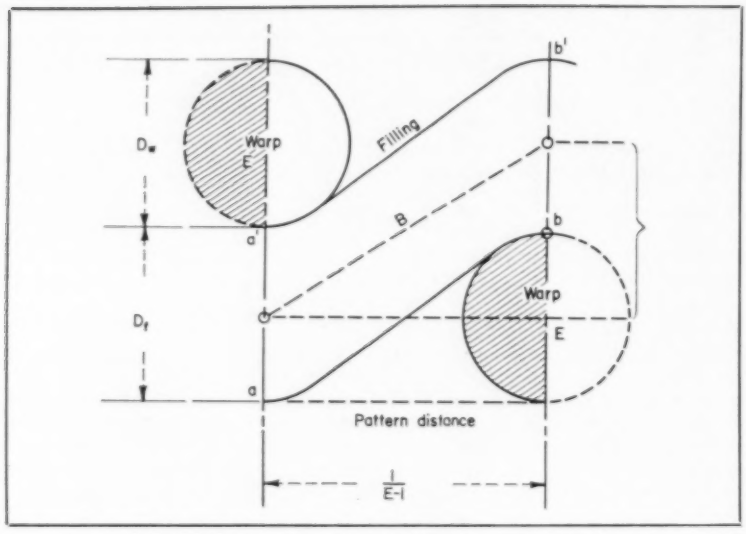
What are the latest methods of dyeing felt hats? (1353)

Cone or Cassé-type machines are increasing the trend toward dyeing hats at the fully planked stage. Hoods were formerly dyed in the half-planked stage to get the best penetration. Only dyes of good fastness to acid planking could be used with this method. Difficulty in dyeing the half-planked body to the shade desired in the finished article was often encountered.

Dyeing the bodies in the fully planked stage has eliminated these difficulties. Metallized-acid dyes have proved successful for this job.

These dyes are applied from a relatively strong acid dyebath; so it is unnecessary to neutralize the bodies after acid planking or carbonizing. A dyebath maintained at the boil for a short period should show a pH of 1.9 to 2.1.

A pH meter should be used to check the dyebath. Indicators do not give exact-enough readings in this pH range. If the pH is unsuitable, it can be adjusted by an addition of sulfuric acid or soda ash.



REPEATING PATTERN is used to calculate the weight of a 1-in.-sq. piece of cotton cloth. When allowances are made for size, the results are close to actual practice.

How To Calculate Cotton-Cloth Weights

Technical Editor:

Are there any methods of figuring cloth weights when the density and the size of the yarn is known? (1350)

Here is a method recently devised by John Duerst, who uses his fiber-pattern formula. After calculation, the results show little deviation from data in various handbooks.

The formula to find the weight in grains of a 1-in. square of cloth is:

$$0.23\left[B\times(E-1)\frac{P}{N_f}+B^1\times(P-1)\frac{E}{N_w}\right]$$

where

P = No. of filling ends per inch
E = No. of warp ends per inch

$$B = \sqrt{\left(\frac{1}{E-1}\right)^2+0.0003^2(U_w+U_f)^2}$$

$$U_w = \sqrt{1+20{,}000/N_wF}-1$$

$$U_f = \sqrt{1+20{,}000/N_fF}-1$$

$$B^1 = \sqrt{\left(\frac{1}{P-1}\right)^2+0.0003^2\,(U_w+U_f)^2}$$

N_f = Filling yarn number
N_w = Warp yarn number

B is the filling pattern length obtained from the repeated pattern shown in the diagram.

$$B = \sqrt{\left(\frac{1}{E-1}\right)^2+\left(\frac{D_w+D_f}{2}\right)^2}$$

B^1 is the warp pattern length

$$B^1 = \sqrt{\left(\frac{1}{P-1}\right)^2+\left(\frac{D_w+D_f}{2}\right)^2}$$

The pattern length or crimp length B repeats itself $E-1$ times per inch. The length B^1 is repeated $P-1$ times per inch.

Therefore the weight in grains of filling in 1 sq. in. of cloth =

$$B\times(E-1)\,P\times\frac{7{,}000}{30{,}240\times N_f}$$

The weight in grains of warp in 1 sq. in. of cloth =

$$B^1\times(P-1)\,E\times\frac{7{,}000}{30{,}240\times N_w}$$

Yarn diameters are functions of fiber diameters, and the number of fibers per yarn diameter are difficult to measure. These diameters can be expressed in terms of yarn numbers and fiber weight or Micronaire (F), and this is done with Duerst's fiber-pattern formula $D_w = du_w$.

Where d = Fiber diameter, which averages about 0.0006 in.

$$U_w = \sqrt{1+20{,}000/N_wF}-1$$
$$D_w = 0.0006\,u_w$$
$$U_f = \sqrt{1+20{,}000/N_fF}-1$$
$$D_f = 0.0006\,u_f$$

Humanics — A TW Brief

Retired Employees Can Have Valuable Ideas

Even with the help of a suggestion system, it is sometimes hard to get employees to submit their ideas. A natural reserve and a keen sense of job preservation keep the average worker from disclosing his trade secrets.

But this attitude often changes when a worker retires. He takes a more-tolerant view and can discuss the job in an impersonal way. Over the years he has accumulated a fund of useful knowledge that will be wasted if it is not passed on to others who are still active.

Of course the retired worker is out of touch with the job and can't be expected to come up with many new ideas. It is the old tried and proved methods and Kinks he has used that are valuable.

Public-relations methods should include some sort of program to keep in touch with the retired workers and give them a chance to sound off occasionally. It may be that after retirement the worker has more to contribute toward mill improvement than he had while working. George M. Dodson.

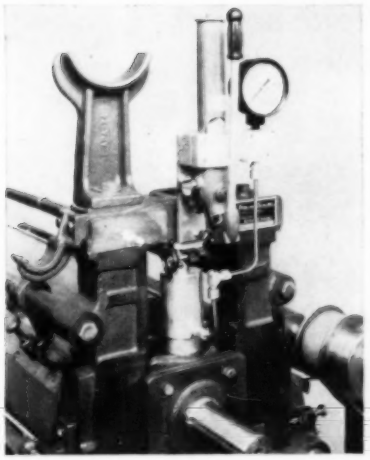
Use Air Hose To Clean Bags for Storing Wool

Technical Editor:

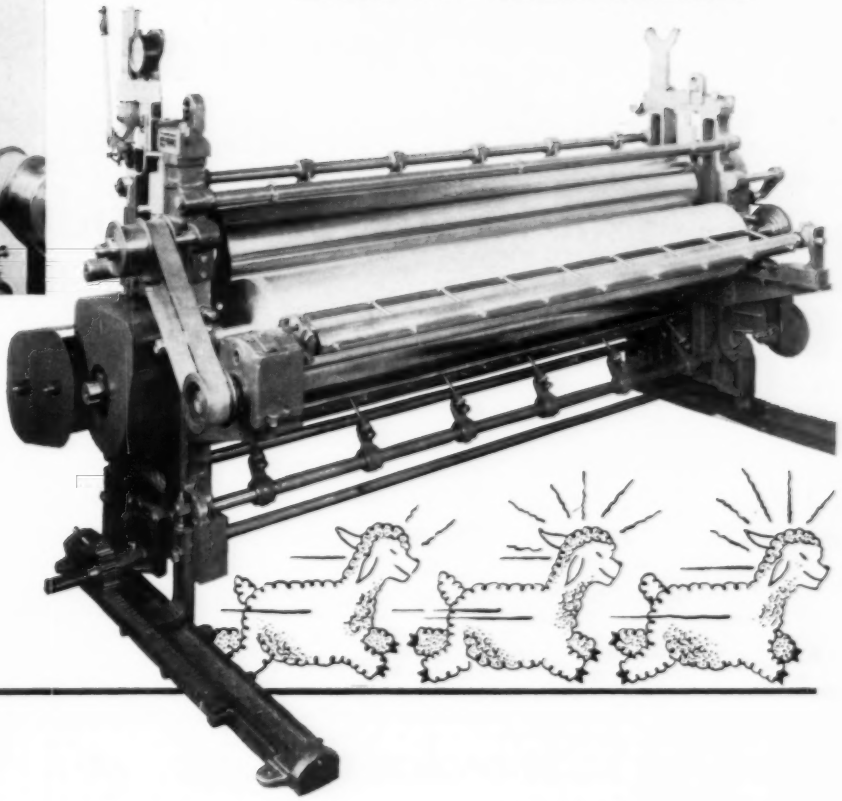
We keep our dyed wool stock in jute bags to await carding, but jute hairs get mixed with the wool. If we use the bags for colors that are different from the last batch, we get specks of wrong color in the stock. We've tried nylon bags but find that the wool does not retain moisture and becomes loaded with static. How can we solve this problem? (1357)

Jute bags are perfectly safe to use for storing wool, but don't use a broom to clean the inside of the bag after you have emptied the raw material. Turn the bag inside out and use an air hose to blow away the loose fibers.

Brushes simply raise the jute fibers in the bag. The air hose does not touch the jute fibers and does no injury to the bag.



PERKINS
BURR CRUSHER

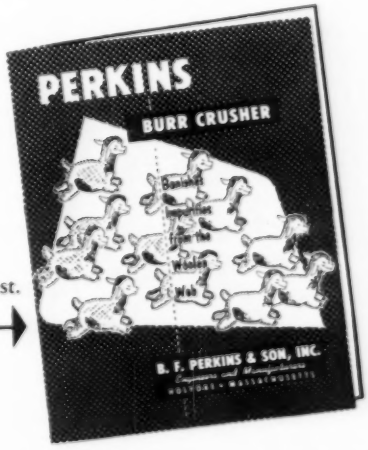


Banishes Impurities from the Woolen Web

Perkins Burr Crusher Machines are manufactured by the original manufacturer of the first American-made Burr Crusher Machines during the early period of installation in this country and Canada, from 1941 to 1944. The machines are standard and the parts are readily replaceable on existing Burr Crushers now in operation. All moving parts subjected to wear, such as the chilled iron rolls, bearings, gears, studs and sprockets, are also standardized with the many Peralta Machines now in operation throughout this country and Canada.

Machinery and Engineering Corporation of Amherst, New Hampshire, distribute and service the Perkins Burr Crusher Machines.

This bulletin, which gives complete Burr Crusher information, yours on request.



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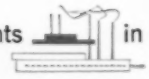
BETTER LUBRICATION BEGINS WITH ALEMITE **OIL-MIST**

How to cut lubricant costs up to 90% — and increase production!

Large and small plants  in many industries are making important maintenance savings while actually boosting machine output—with Alemite Oil-Mist Automatic Lubrication.

The Oil-Mist system atomizes oil into air-borne particles, carries them through tubing to all lubrication points and bathes every moving surface with a cool film of clean lubricant while machines operate. It provides constant, uniform, completely automatic lubrication to a few or to hundreds of bearings. Accurate and foolproof, Oil-Mist eliminates guesswork. No bearing can be overlooked or over-lubricated.

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An Oil-Mist system can be applied to any new or installed machine. Find out in detail how it cuts costs, reduces man-hours and machine downtime, extends bearing life, and increases production.

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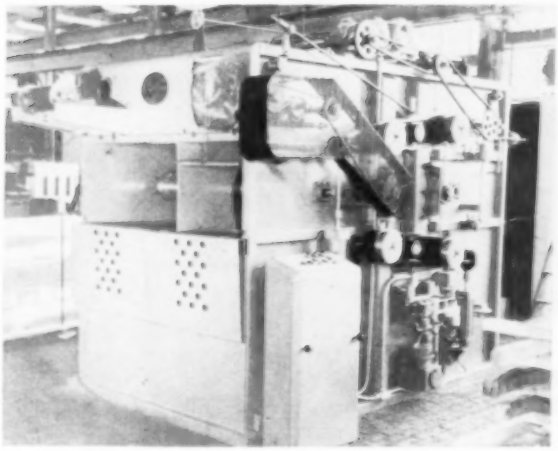
Continuous Dry Mill

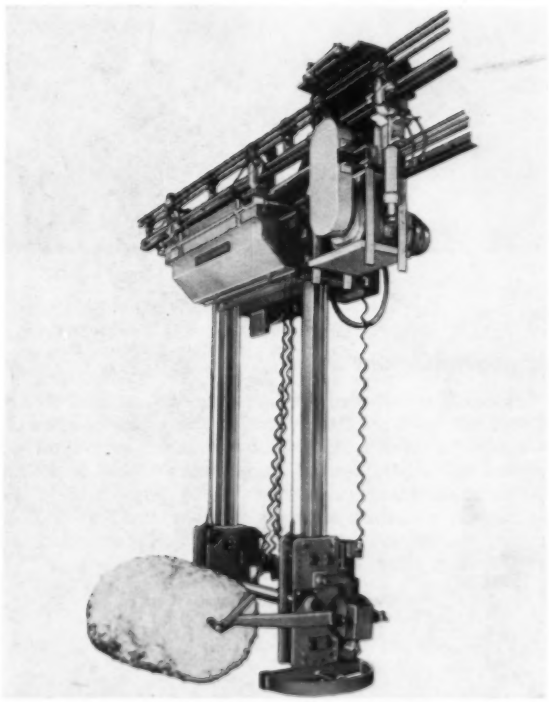
A reciprocating, continuous dry mill has been marketed by James Hunter Machine Co., North Adams, Mass.

The mill is placed in a carbonizing range and operates automatically so that no extra help is necessary. The cloth is fed into and delivered from the machine by two sets of nip rolls.

The crushing action is provided by two sets of rolls that pass the cloth in alternating directions. Two scrays inside the machine hold the cloth while it is being reversed. A detecting device at the bottom of each scray is activated by the amount of cloth in each scray to open one set of rolls and close the other so that the cloth is reversed without changing the direction of the rolls.

Circle T-1 on Reader-Service Card





Lap Balance and Lift

A combination lap balance and lift to check weight tolerance of cotton picker laps has been announced by American MonoRail Co., 13,107F Athens Ave., Cleveland, Ohio.

The balance checks the variance from standard weight and indicates directly to the picker tender the amount over or under standard. Variance is shown on an illuminated dial mounted under a magnifying head so that the operator can see it easily from a distance. A remote-control head that can be placed anywhere in the room also is available.

The machine handles the lap mechanically from the picker to an overhead lap-handling system, and the operator is never required to lift the lap. To operate the balance, the operator tears the lap from the picker and rolls it a few inches out from under the hold-down journals and into the arms of the lap-balance car. After the lap weight is checked, the machine places the lap automatically into the overhead carrier.

Circle T-2 on Reader-Service Card

Colloidal Lubricant

A colloidal lubricant that adheres to smooth, glossy surfaces, increases the tensile strength of fibers, and eliminates static and gumming during carding has been developed by Harry Miller Corp., 4th & Bristol Sts., Philadelphia 40, Pa.

Called Fibregard, the lubricant is said to reduce breakage of treated yarns, insure slick warps, and increase loom efficiency.

The product is instantly soluble in hard or soft, hot or cold water.

Circle T-3 on Reader-Service Card

Liquid Transmitter

A pressure and liquid-level transmitter that measures pressures up to 250 psi. is announced by Conoflow Corp., 2100 Arch St., Philadelphia 3, Pa.

The transmitter is suitable for many different services and especially for installations involving viscous fluids or materials that solidify in static lines of conventional pressure transmitters.

It can be mounted either horizontally or vertically on both open or closed tanks. No dip tubes, floats, or other mechanical devices are required inside the vessel.

Circle T-4 on Reader-Service Card

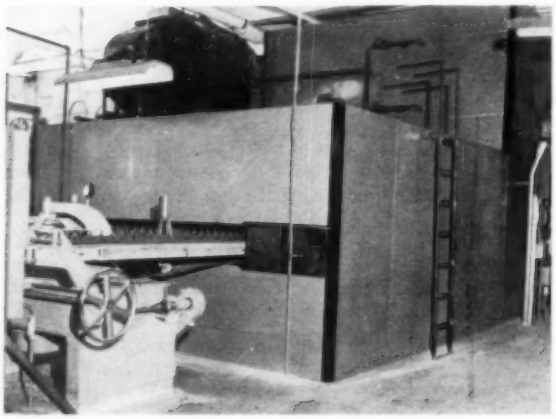
Bevel-Edge Machine

A bevel-edge machine designed for finishing off the edges of carpets and rugs is announced by British Tufting Machinery Ltd., Whitebirk Dr., Blackburn, Lancaster, Eng.

The machine is driven by a fractional-horsepower electric motor that drives a spiral cropping blade, which works against an adjustable ledger blade. The head can be set to cut bevel edges of varying angles.

In operation, the carpet is placed on the floor and the edge is put under an adjustable holding-down plate. The machine has easy-running wheels and is drawn around the four sides of the carpet by means of a handle. It can also be used for table-top cutting of samples.

Circle T-5 on Reader-Service Card



Improved Tenter Dryer

A drying system that produces even drying from selvage to selvage has been introduced by James Hunter Machine Co., North Adams, Mass. Dryer nozzles have been designed so that the heated air impinges evenly across the goods at maximum velocity.

Plenum chambers above and below the tenter chain divide the air evenly so that facing from dye or finish migration is eliminated.

Circle T-6 on Reader-Service Card

Yarn Meter

Several improvements have been made to the Stitch-O-Meter developed by Supreme Knitting Machine Co., 94-02, 104 St., Ozone Park 16, N. Y. The 4½-in.-square, full-view, calibrated meter has a smooth aluminum front panel and a clear, bright dial so that readings can be seen quickly and accurately.

The meter can be calibrated at three points so that stitch settings can be permanently recorded. The meter can be used effectively on fast-, normal-, and slow-running machines.

When the readings are retained for records, the settings can be duplicated on the machine at any time.

Circle T-7 on Reader-Service Card

Less Slippage, More Poundage, Uniform R.P.M. With This 180° Belt Contact

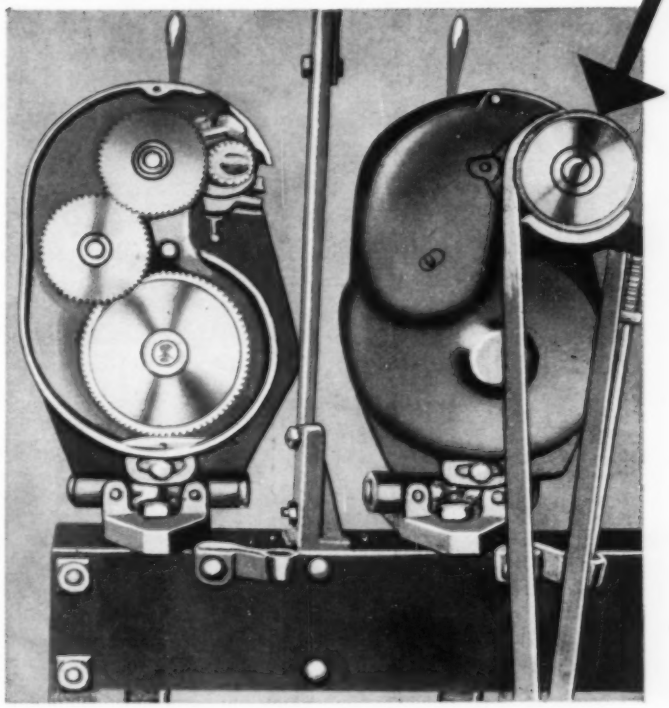


Illustration also shows positive gear driven gainer attachment which controls the ratio between the revolutions of the spindle and the cam.

FACTS ABOUT FOSTER MODEL 75

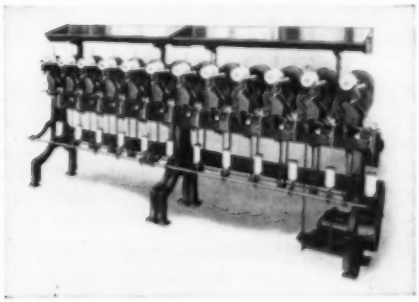
1 HIGHEST PRODUCTION, consistent with good quality. Spindle speeds up to 1500 r.p.m.

2 LOW OPERATING COST. Machine quickly loaded, threaded and doffed. Lifting of convenient handle starts spindle. Durable, positive automatic stop motion.

3 LOW MAINTENANCE & REPAIRS. Floor stands, frames, rails and supply board are made of steel. Spindles are ball bearing mounted. Belts are under tension only when spindles are running. Large diameter, wide angle cam reduces shock and vibration. Tension and pressure adjustments easily made.

4 HIGH QUALITY OUTPUT. Slow starting device prevents stretching and breaking at start. Practically straight thread line (even with oiling attachment) prevents excessive tension build-up. Straight edge cone has slightly convex base to prevent "nipping" when knitting or warping. Foster Zenith Yarn Cleaner provides accurate inspection. Tension automatically compensated for changing yarn speed. Oiling attachment designed to provide uniform application of oil.

Bulletin A-95-A on request



Each spindle on the Foster Model 75 (for winding rayon, nylon, silk and other yarns) is driven by its own belt from a countershaft running the length of the machine. There is a quarter turn in each belt and a full 180° arc of contact is obtained. Result — less slippage which means increased production and uniform r.p.m. of all spindles.

This is only one of many reasons why the Foster Model 75 produces an ideal cone (straight edge or pineapple) at minimum cost for knitting or warping. Other contributing factors are listed herewith.

FOSTER MACHINE CO., WESTFIELD, MASS., U. S. A.

Southern Office: Johnston Bldg., Charlotte, N. C. Canadian Representative: Ross Whitehead and Company Limited, 1475 Mountain St., Montreal, Que. and 100 Dixie Plaza, Port Credit, Ont.; European Representative: Muschamp Textile Machinery Limited, Keb Lane, Bardsley, Oldham, England.

FOSTER MODEL 75

FOR WINDING RAYON, NYLON AND OTHER YARNS

For more data, write this page number on Reader-Service card. →

Loom Dobby

A dobby that can run at speeds in excess of 250 picks per minute has been developed by the British Cotton Industry Research Assn., Manchester, England.

The dobby is a 16-shaft positive double-lift, open-shed type that can be adapted to any ordinary loom. It is of simple construction and is assembled of few parts.

Wilson and Longbottom Ltd., Nelson Foundry, Bradford (Yorks), England, is licensed to manufacture the dobby.

Circle T-8 on Reader-Service Card

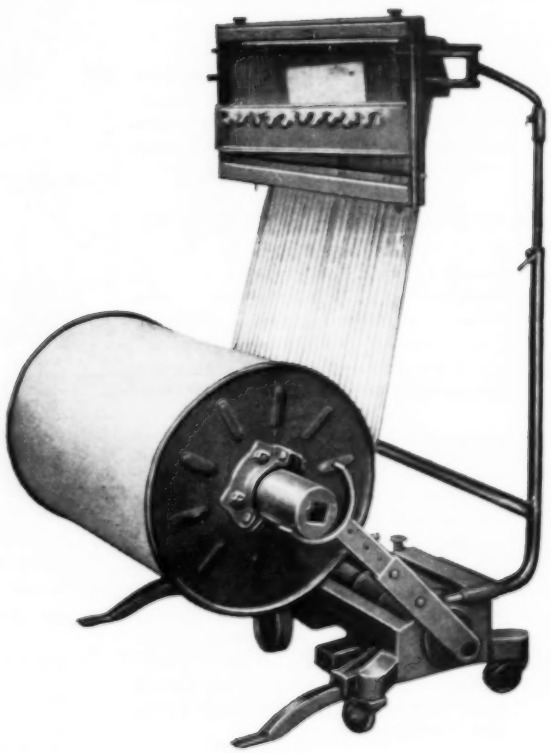
Beam Truck

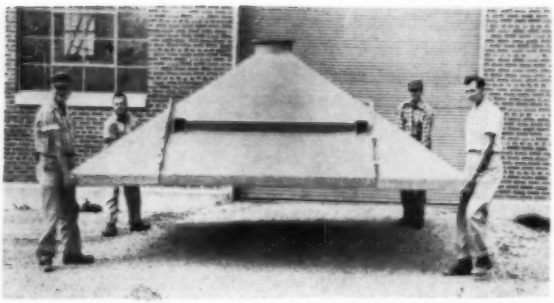
A hydraulic truck for lifting and hauling beams is available from Meccanica A. Sibilia, Castelletto Ticino, Italy.

The truck is especially suitable for carrying beams and harnesses from the drawing-in room to the weave room, placing the warp in the loom, and doffing the warp from the slasher.

A beam can be picked up from floor level by the truck. It is adjustable to the length and diameter of different beams and has adjustable and removable supports for holding the pattern.

Circle T-9 on Reader-Service Card





Corrosion-Resistant Material

Hoods and ventilators exposed to corrosive vapors can be fabricated from a glass fiber-resin formula developed by Durez Plastics Div., Hooker Electrochemical Co., North Tonawanda, N. Y. The material, called Hetron 92, is lightweight, fire-retardant, and highly resistant to corrosion from chemical fumes. Ducting and impellers made from Hetron 92 are being made available by fabricators.

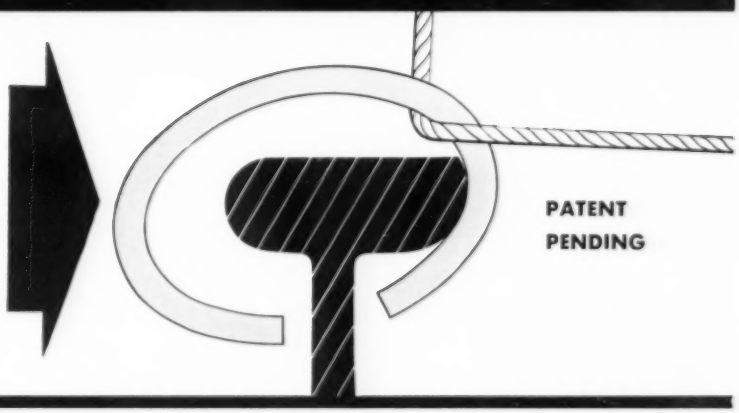
Circle T-10 on Reader-Service Card

ANNOUNCING THE NEW DIAMOND FINISH

"ANTI-WEDGE" RING

THE FIRST MAJOR CHANGE
OF THE CENTURY IN FLANGE DESIGN

- **TOP IS FLAT.**
- **WEB IS OFFSET.**
- **INNER FLANGE IS CONTOURED TO TRAVELER, PROVIDING NEW CONCEPT OF BEARING AREA.**



PATENT PENDING

Permits MAXIMUM advantage from elliptical travelers

This new concept separates the *yarn room area* from the *traveler bearing* area. The design of the yarn room area prevents wedging or trapping of the yarn at high speeds. The traveler bearing area provides the low-gravity elliptical traveler with a long bearing contact, lower pressure per square inch, hence greater heat dissipation. The offset web prevents traveler horns from touching.

Results: Yarn runs freer at high speeds. Travelers run cooler at high speeds, in accurately controlled orbit.

Thereby: For the first time permits Elliptical Travelers to be used to MAXIMUM advantage.

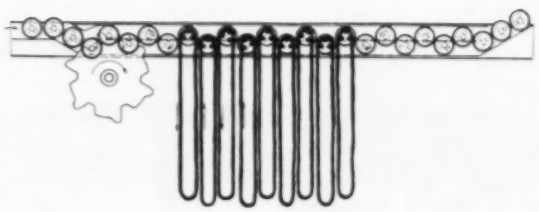
SEND SAMPLE OR SPECIFICATIONS FOR QUOTATION

WORLD'S LARGEST MAKERS OF RINGS EXCLUSIVELY

WHITINSVILLE (MASS.) SPINNING RING CO.
Makers of Spinning and Twister Rings since 1873
DIAMOND FINISH

Rep. for the Carolinas & Va.: W. K. SHIRLEY, P.O. Box 406, Belmont, N. C.
For Ala., Ga., & Tenn.: P. C. EVERETT, 369 Meadowbrook Dr. NE, Atlanta

For more data, write this page number on Reader-Service card. →



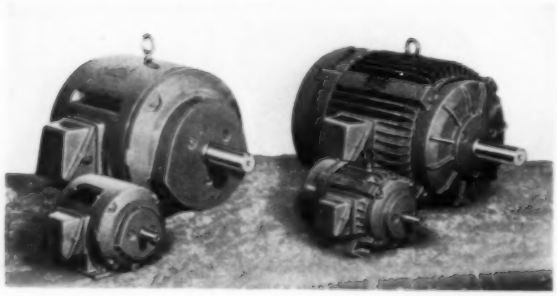
Hanked-Yarn Dryer

A continuous dryer for hanked yarns has been developed by Fleissner & Sohn Maschinenfabrik, Egelsbach, Frankfurt am Main, Germany.

The hanks are loaded on reel-shaped rods that are entered into the drying chamber in a staggered arrangement so that each rod turns its neighbor by direct contact. The yarn turns on the rods continuously as they pass through the dryer. Upper and lower guide rails support the rods so that there is no undue crowding or jamming between rods.

The drying is done by means of forced hot air. The compact design of the machine cuts down floor-space requirements. The smallest unit will dry 2,200 lbs. of wool in 8 hrs. The machines are available in ranges of four drying units and a conditioning chamber if desired. The U. S. representative is Texplant Corp., 695 Summer St., Stamford, Conn.

Circle T-11 on Reader-Service Card



Totally Protected Motors

A complete line of totally protected Series-D a. c. motors in new large NEMA frame sizes of 364U through 445U has been introduced by Reliance Electric & Engineering Co., 24,701 Euclid Ave., Cleveland 17, Ohio.

Footless and foot-mounted horizontal models in the 360-frame diameter are stocked in all standard enclosures: protected, totally enclosed, fan-cooled, corrosionproof, and explosionproof. They are for operation on 208- through 550-v. in-plant a.c.

Other new NEMA frame sizes through 125 hp. are becoming available on a monthly schedule.

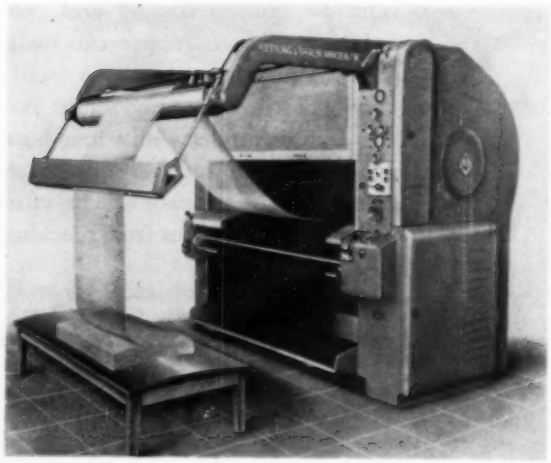
Circle T-12 on Reader-Service Card

Automatic Decating Machine

A completely enclosed decating machine for woolen fabrics is being featured by Kettling & Braun, Minden, Westphalia, Germany. U. S. Agent is Ernest L. Frankl Associates, 515 Madison Ave., New York 22, N. Y.

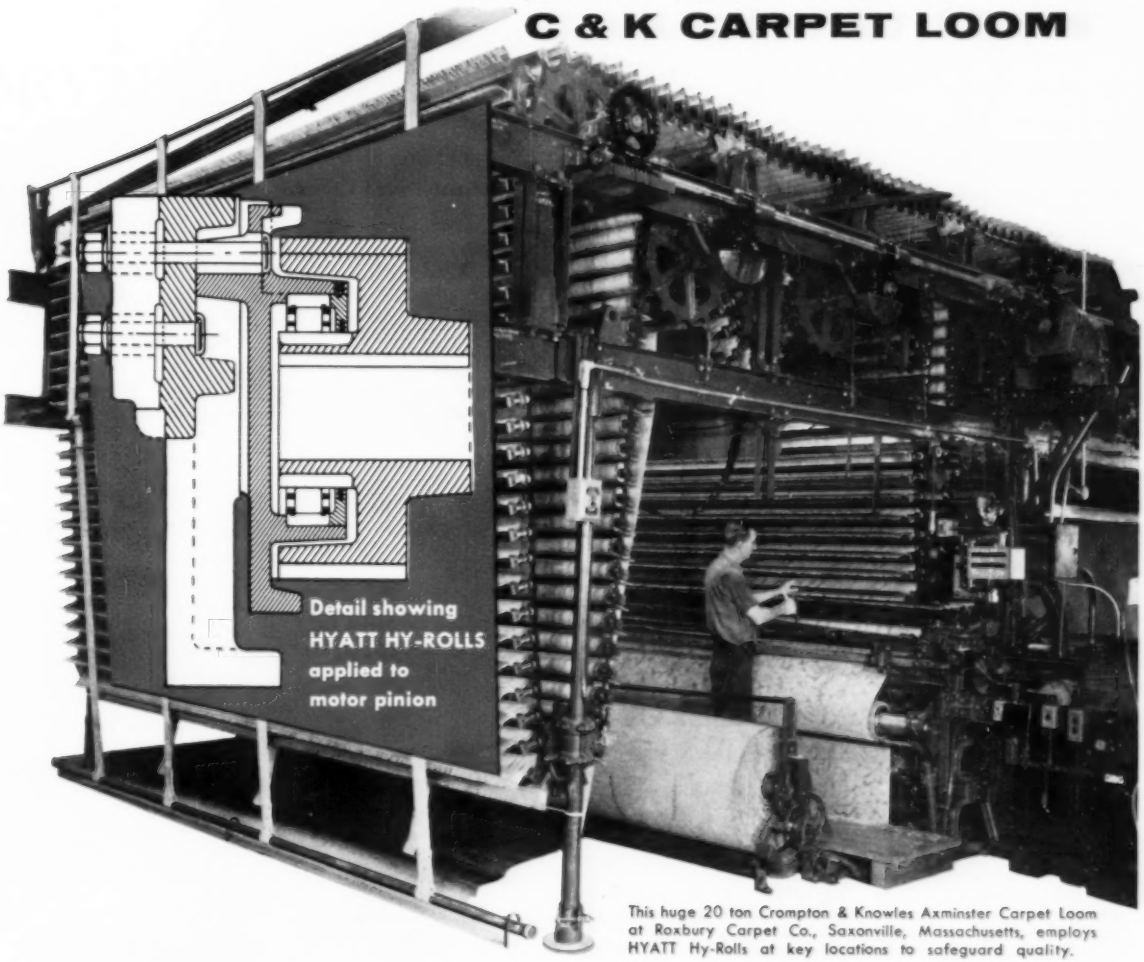
The decater is automatic in action and provides for steaming the fabric either from outside in or inside out. Cloth speeds are variable up to 55 yds. per min., and the steaming and cooling cycles can be set for various lengths of time to suit the fabric being processed. A cooling roller is mounted between the decater and the plaiting swing.

A modification of the machine has a smaller main cylinder that produces a harder finish.



Circle T-13 on Reader-Service Card

HYATT HY-ROLLS MAINTAIN CRITICAL SETTINGS ON 15 FOOT C & K CARPET LOOM



This huge 20 ton Crompton & Knowles Axminster Carpet Loom at Roxbury Carpet Co., Saxonville, Massachusetts, employs HYATT Hy-Rolls at key locations to safeguard quality.

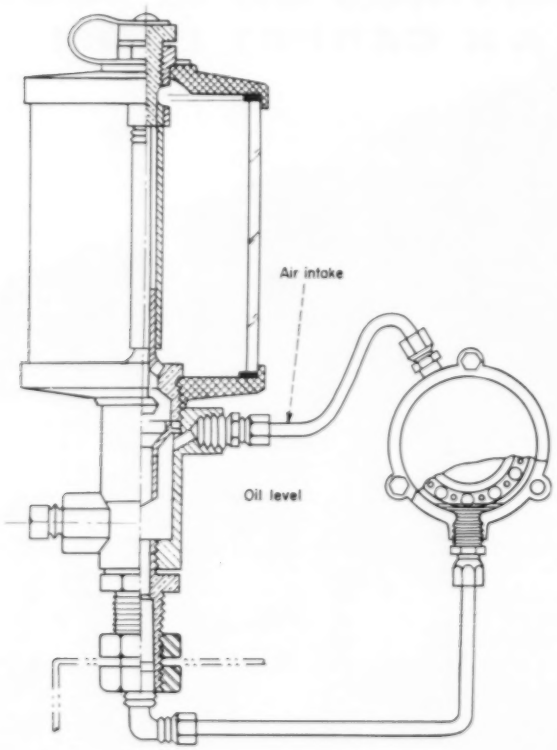
Crompton and Knowles, like other leading textile machinery manufacturers, specify HYATT Hy-Rolls to insure maximum efficiency and dependability for their products. Precision-built HYATT bearings maintain critical settings where fast-wearing plain bearings often fail. From carding to finishing, HYATTS substantially reduce costly seconds by assuring uniform quality of yarn and fabric and eliminating oil spatter completely. HYATTS save up to 90% on lubrication—up to 40% on power—assure longer trouble-free bearing life. For original equipment or replacement, all these advantages make standardization on HYATT Hy-Rolls a *profit building program*. Hyatt Bearings Division, General Motors Corporation, Harrison, New Jersey.

When you modernize or replace any textile machinery, be sure it has money-saving . . .

1908–1958
GM
FORWARD FROM FIFTY

HYATT HY-ROLL BEARINGS FOR TEXTILE INDUSTRY

For more data, write this page number on Reader-Service card. →



Constant-Level Oiler

A constant-level oiler that replaces three models of oilers formerly needed has been developed by Oil-Rite Corp., 2301 Waldo Blvd., Manitowoc, Wis. The new design has an adjustable oil level, high-surge level, and special air intake. Oil capacity is 2 oz. to 1 gal.

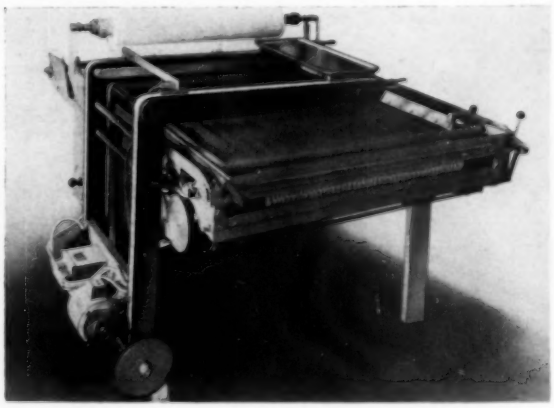
The principal advantages of the oiler are: It provides the largest possible internal passages for heavier oil, a top filler cap simplifies replenishing oil without removing the reservoir, and saran tubing supplies bearings that vibrate.

Circle T-14 on Reader-Service Card

Easily Demountable Squeegee

An automatic squeegee for screen-printing machines is designed so that screens can be easily lifted out for cleaning. Developed by Reisinger Apparatebau, 54 Lerchenfelder Strasse, Vienna 8, Austria, the unit is mounted in such a way that it can be tilted up at the end of a stroke, leaving the screen free to be lifted off the table.

The squeegee is mounted on guides that are pivoted on a heavy frame. In operation, the guides are locked in place but may easily be unhooked and swung up to one side, carrying the squeegee assembly free of the printing table. Screens that have to be cleaned immediately after use are thus more easily and quickly taken out of the machine.



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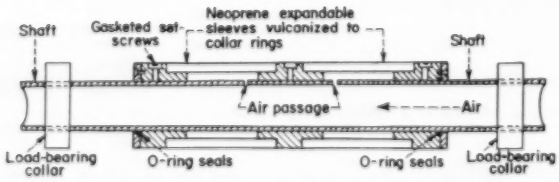

Air-Actuated Center Shaft

Paper cores are firmly gripped and easily released from a center shaft developed by J. W. Cole, Delwood Rd., Waynesville, N. C.

Compressed air is used to inflate expandable neoprene sleeves mounted on the shaft. The air is introduced through the hollow center shaft and forces the sleeves against the core. Carrier rings support the load. When the batch is complete, the air is valved off and the center bar is easily removed.

Circle T-16 on Reader-Service Card

Maintenance–Saving Features You Can See

LUNKENHEIMER IRON BODY GATE VALVES

Machined guides . . . another Lunkenheimer exclusive, eliminate chatter and reduce wear . . . *true-solid discs* are unaffected by temperature variations . . . *Stemalloy® stems* assure longer stem thread life . . . *seat rings do not come loose or distort*—these are a few of the features that make Lunkenheimer Iron Body Gate Valves the most maintenance-free in the industry.

Ask your Lunkenheimer Distributor for a comparison test that will save you maintenance dollars, or write The Lunkenheimer Company, Cincinnati 14, Ohio.

Fig. 1430
Iron Body
Gate Valve

LUNKENHEIMER QUALITY

LUNKENHEIMER®
THE ONE *Great* NAME IN VALVES

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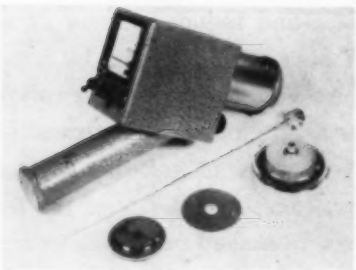
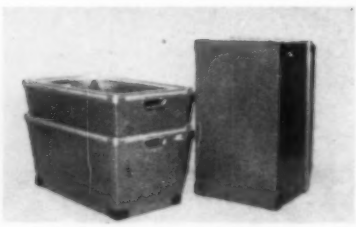


Static Detector

A portable instrument for detecting and measuring static-electricity charges is available from United States Radium Corp., Morristown, N. J. The instrument measures trouble spots in process flow to determine whether or not the disturbance is caused by static. Trouble spots can be pinpointed with no interrupted process flow.

The instrument, with a measuring range of 0 to 500,000 v., is built around a chamber that ionizes the air in the vicinity of the static disturbance. A sample charge is conducted to the instrument, where it is measured.

Circle T-17 on Reader-Service Card

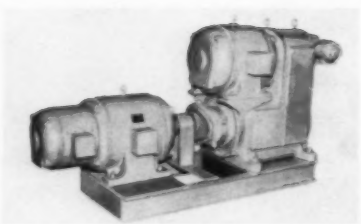


Industrial Boxes

A line of vulcanized-fibre boxes for textile and other uses is announced by William Bal Corp., 947 Newark Ave., Elizabeth, N. J. The boxes are made to the buyer's specification and can be obtained in any size.

The boxes can be had with straight or tapered sides for nesting one into the other or for stacking.

Circle T-18 on Reader-Service Card

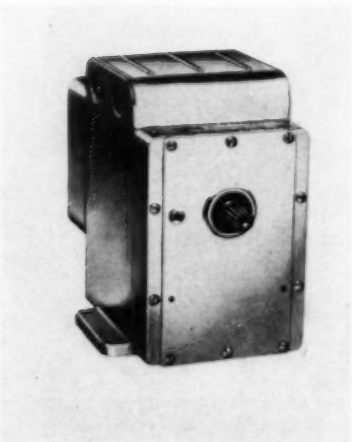


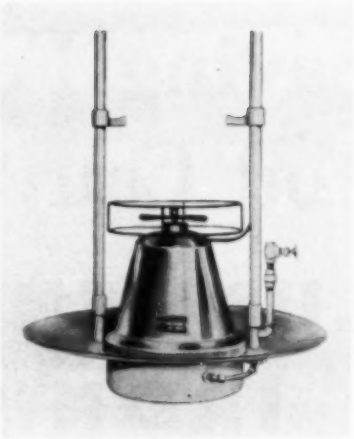
Variable-Frequency System

A method of producing infinitely-variable speeds in one motor or a group of a.c. motors has been developed by Electra Motors, Inc., 1110 Lemon St., Anaheim, Calif. The system supplies variable-frequency current to control the speed of "slave" motors.

All sizes of a.c. motors and gear motors are controlled in unison and in proportion from the single source. A 500% frequency range allows a five-to-one speed variation. The system is available for either manual, remote, or automatic control.

Circle T-20 on Reader-Service Card





Motor-Driven Humidifier

A self-contained motor-driven humidifier for single or multiple installations, announced by The Standard Engineering Works, Pawtucket, R. I., features horizontal distribution of humidity vapor. A humidity control is also available with the humidifier.

The humidifier consists of a humidity-vaporizing unit, a basin with a float valve for water-level control, hangers, brackets, and the humidifier control.

It may be suspended by hangers from overhead beams, flat ceilings, or cross girders.

Circle T-19 on Reader-Service Card

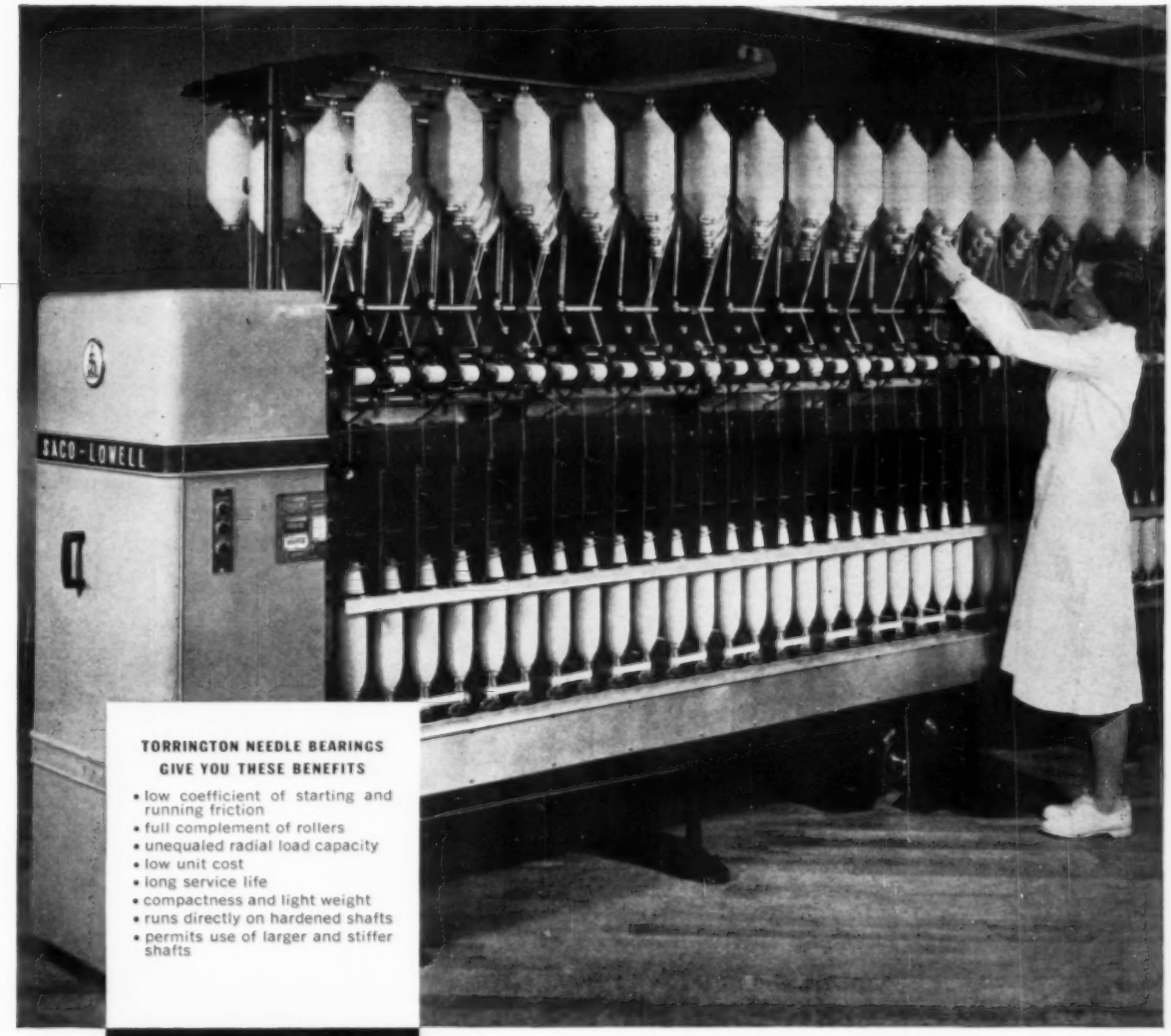
Motor To Control Dampers

An electric oil-submerged motor operator has been announced by Barber-Colman Co., Rockford, Ill. It is to control dampers in heating, ventilating, and air-conditioning systems.

The motor has a gear train and drive completely submerged in oil and sealed in a die-cast case. Auxiliary switches are readily accessible and simple to adjust, and the motor can be mounted in any position. The motor operator is available in 24, 115, 208, and 230 V.

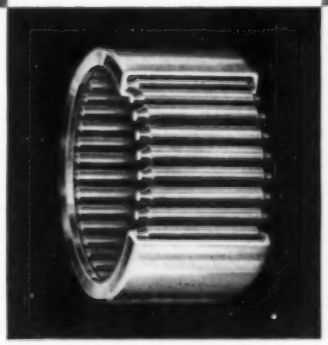
Circle T-21 on Reader Service Card

CONTINUED ON PAGE 196



TORRINGTON NEEDLE BEARINGS GIVE YOU THESE BENEFITS

- low coefficient of starting and running friction
- full complement of rollers
- unequaled radial load capacity
- low unit cost
- long service life
- compactness and light weight
- runs directly on hardened shafts
- permits use of larger and stiffer shafts



1,848 hidden helpers speed large package spinning

High-speed, large package spinning of roving or sliver into yarn was introduced with the Saco-Lowell Spinning Frame Model SG. Among many refinements contributing to its speed and efficiency are anti-node balloon control rings to permit higher ring traveler speeds, and the extensive use of Torrington Needle Bearings.

In all, 1,848 Needle Bearings are used in lifter pulleys, draft gearing, top rolls, roll joints, builder and lifter motions. In every application, these "hidden helpers" insure efficient anti-friction operation at high spindle speeds and drastically reduce the frequency of relubrication, thus minimizing down time and risk of yarn spoilage.

Torrington Needle Bearings have made possible many important refinements of design and operation in all kinds of textile equipment. This experience is available, through our Engineering Department and your Torrington representative, to help you improve your products. *The Torrington Company*, Torrington, Conn.—and South Bend 21, Ind.

TORRINGTON BEARINGS

District Offices and Distributors in Principal Cities of United States and Canada

NEEDLE • SPHERICAL ROLLER • TAPERED ROLLER • CYLINDRICAL ROLLER • NEEDLE ROLLERS • BALL • THRUST

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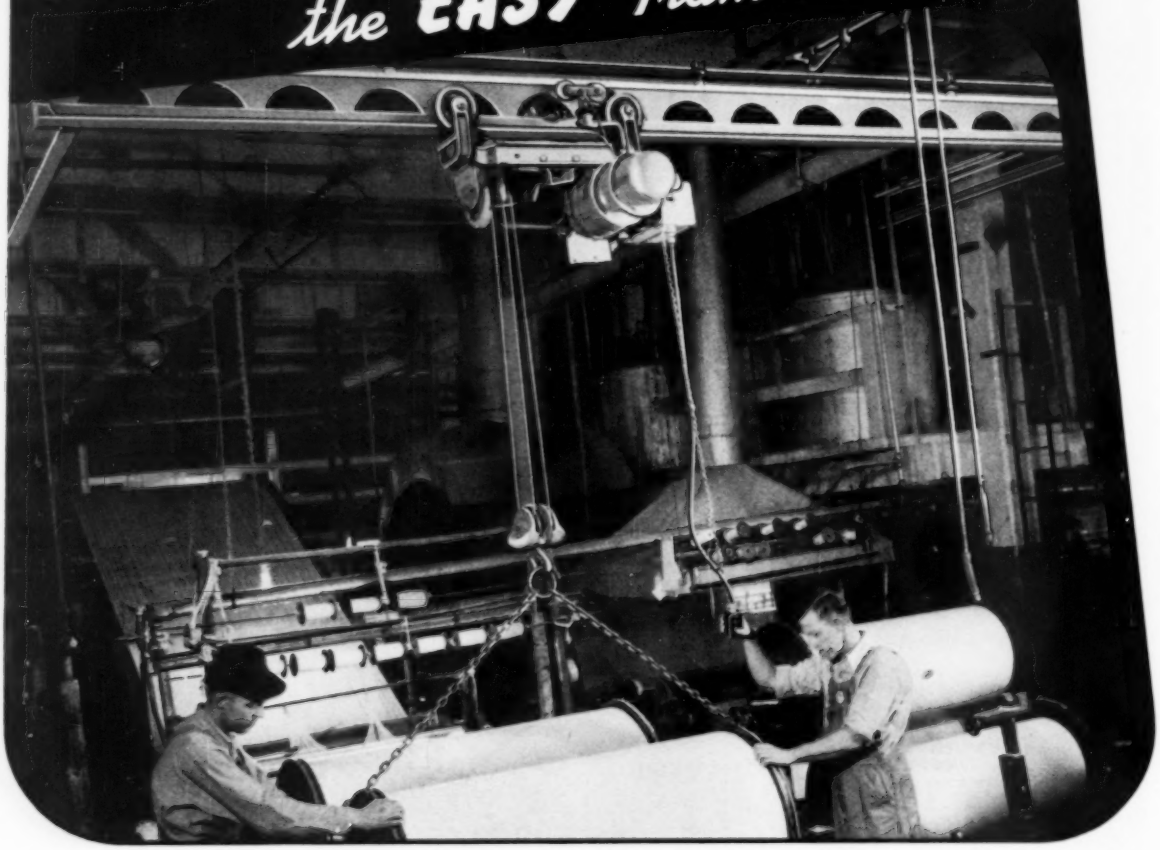
LOAD Slasher Creels the EASY Tramrail Way



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T-1	T-2	T-3	T-4	T-5	T-6	T-7	T-8	T-9	T-10	T-11	T-12	T-13
T-14	T-15	T-16	T-17	T-18	T-19	T-20	T-21	T-22	T-23	T-24	T-25	T-26
T-27	T-28	T-29	T-30	T-31	T-32	T-33	T-34	T-35	T-36	T-37	T-38	T-39
T-40	T-41	T-42	T-43	T-44	T-45	T-46	T-47	T-48	T-49	T-50	T-51	T-52
T-53	T-54	T-55	T-56	T-57	T-58	T-59	T-60	T-61	T-62	T-63	T-64	T-65
T-66	T-67	T-68	T-69	T-70	T-71	T-72	T-73					

NEW LITERATURE

F-1	F-2	F-3	F-4	F-5	F-6	F-7	F-8	F-9	F-10	F-11	F-12	F-13
F-14	F-15	F-16	F-17	F-18	F-19	F-20	F-21	F-22	F-23	F-24	F-25	F-36
F-27	F-28	F-29	F-30	F-31	F-32	F-33	F-34	F-35	F-36	F-37	F-38	F-39
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TEXTILE WORLD, A McGraw-Hill Publication, New York 36, N. Y., February, 1958

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NO REPEATS . . . Listed here for February are current bulletins reviewed by the editors of TEXTILE WORLD. To get the ones you need, circle the number on the Reader-Service card, as described on the preceding page.

TEXTILE MACHINERY & AUXILIARY EQUIPMENT

Oil bath aftercleaner—Described in dust control bulletin No. 285A from American Air Filter Co., Inc. (F-1)

Narrow-fabric compactor — For literature or trial sample runs, contact Riggs & Lombard, Inc. (F-2)

Electromagnetic clutch—Announced in Bulletin No. 501 issued by Stearns Electric Corp. (F-3)

X-ray instruments—For element analysis and structure determination. Engineering data given in 12-p. booklet issued by Instruments Div., Phillips Electronics, Inc. (F-4)

Industrial instrument — Accessories and supplies listed in 60-p. catalog available from Foxboro Co. (F-5)

Oil applicators—For Trico chain oilers described in folder from Trico Fuse Mfg. Co. (F-6)

Humidity instrumentation—A complete line of humidity indicators, recorders, and controllers described in catalog from Serdex, Inc. (F-7)

Scales—For various industrial uses are listed in catalog from Exact Weight Scale Co. (F-8)

Heavy-duty drives and flexible couplings—Described in Bulletin No. UD-5801 from Unicentric Div., H. W. North Co. (F-9)

Silent chain drives—For installations from fractional-horsepower drives to huge drives transmitting thousands of horsepower. Engineering data in book 2425 from Link-Belt Co. (F-10)

Cams—For all purposes are listed in booklet No. SC-1 issued by American Cam Co., Inc. (F-11)

SUPPLIES & CHEMICALS

Organic chemicals—Listing includes three new acrylates released by Celanese Corp. of America (F-12)

Expanded metal—For use in plant construction and maintenance is described in Bulletin 20-4 from Joseph T. Ryerson & Son, Inc. (F-13)

Polyethylene ware—For laboratory and other uses described in Catalog 57P prepared by Schaar & Co. (F-14)

Basic chemicals—Used in industry are described in booklet released by Industrial Chemicals Div., Olin Mathieson Chemical Corp. (F-15)

Isopropyl palmitate — Described in technical bulletin No. 1157-1 issued by Sole Chemical Corp. (F-16)

Hot-process softeners—And the conditions of water that make treatment necessary are outlined in 24-p. bulletin from Cochrane Corp. (F-17)

Wall charts—On how to handle and test its hydrogen peroxide are offered

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by Becco Chemical Div., Food Machinery & Chemical Corp. (F-18)

Organic chemicals—Physical property data on more than 350 organic chemicals is included in booklet from Union Carbide Chemicals Co. (F-19)

MAINTENANCE & ENGINEERING

Slasher—And size room controls manual describes eight specific control systems and is available from Powers Regulator Co. (F-20)

Plug-in switch—That can be replaced in 20 sec. is described in bulletin 20 from Micro Switch Div., Minneapolis-Honeywell Regulator Co. (F-21)

Control valves—Bulletin tells how to select and size temperature control valves. Jordan Industrial Sales Div., OPW Corp. (F-22)

Gear pump—For mounting on any machine that requires fluid circulation for lubrication or other purposes described in reference TR-57D distributed by Bijur Lubricating Corp. (F-23)

Control valve—For corrosive products described in catalog page from George W. Dahl Co., Inc. (F-24)

Framing system — Builds shelving, racks, tables, and platforms of slotted angle steel. Booklet from Acme Steel Co. (F-25)

Plug-in busway—Data given in 12-p bulletin issued by Distribution Assemblies Dept., General Electric Co. (F-26)

Thermostatic controls — For shower baths, water heaters, heating, ventilating, and air-conditioning systems described in catalog announced by Powers Regulator Co. (F-27)

Gauges and valves—Catalog No. 305 lists standard and special function liquid level gauges and valves. Jerguson Gage & Valve Co. (F-28)

Weight classifier—For process control of products and packages by weight described in descriptive literature from Exact Weight Scale Co. (F-29)

Process control—Instruments for indicating, recording, and controlling temperature, pressure, etc., described in Bulletin Series A-801 from Swarthout Co. (F-30)

X-ray spectrograph—Booklet gives information on automatic indexing X-ray spectrograph. From Phillips Electronics, Inc. (F-31)

Photoelectric controls—For protection of property against intrusion are described in Bulletin PA 579, Photoswitch

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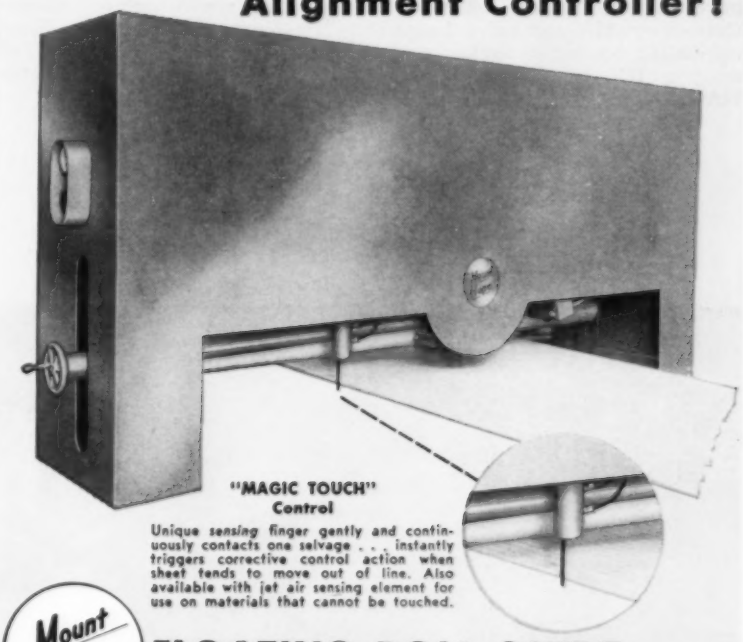

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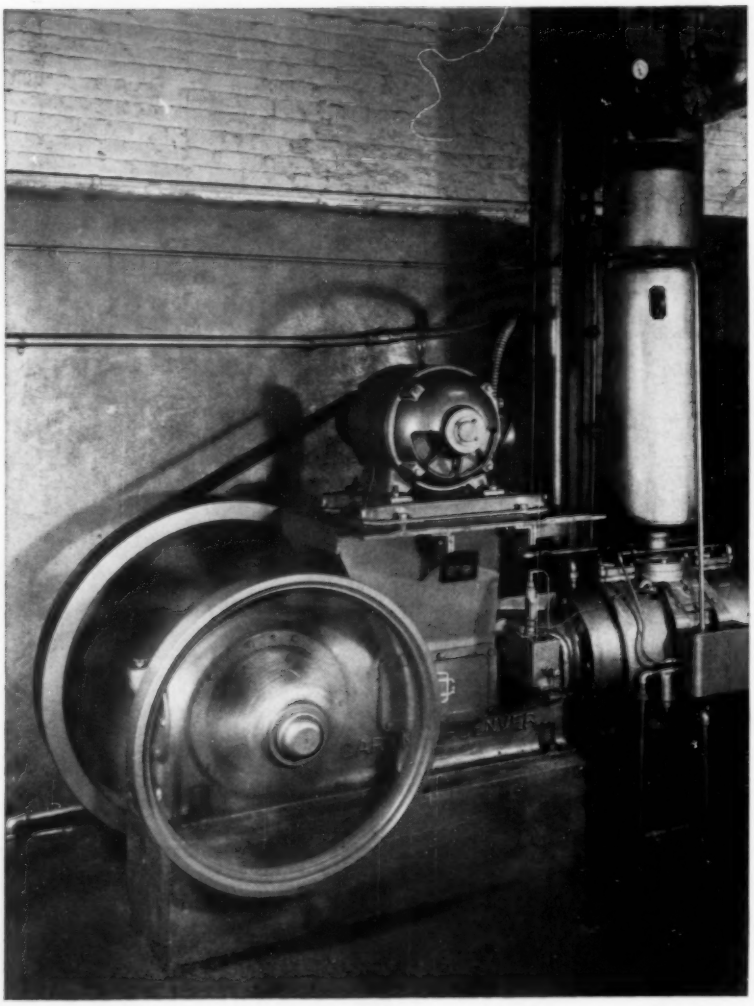


NEW LITERATURE Continued

Div., Electronics Corp. of America (F-32)

Process control—By analytical instrumentation is the subject of an illustrated article distributed by Schlumberger Well Surveying Corp. (F-33)

Shuttle tensioning—With Tension-Rite instrument described in bulletin from Tension-Rite Industries (F-34)

GENERAL

Hiring and holding help—Checklist for procurement of personnel and reduction of turnover available from Manpower, Inc. (F-35)

Lift trucks—Of 12,000 to 16,000 lbs. capacity featured in two bulletins issued by Automatic Transportation Co. (F-36)

Electronic computer — Capabilities, operation, and application explained in manual by Remington Rand Univac Div., Sperry Rand Corp. (F-37)

Two films—On industry and business described in pamphlets from University of California (F-38)

Cost reduction—In materials handling discussed in Bulletin No. 52 from Feedrail Corp. (F-39)

Lift truck — Operating advantages given in folder from Towmotor Corp. (F-40)

Storage area—Shelving, files, cabinets, and bins. Free layout service by Dolin Metal Products (F-41)

Billing desk—And accessory equipment described in booklet LBV-799 obtainable from Remington Rand Div., Sperry Rand Corp. (F-42)

Hand lift truck—Mechanical and hydraulic hand trucks described in brochure from Association of Lift Truck & Portable Elevator Mfrs. (F-43)

Winch—That weighs 35 lbs. has a self-contained motor and a lifting capacity of 6,000 lbs. described in booklet from All American Engineering Co. (F-44)

Telescoping Upright—For fork trucks described in booklet from Industrial Truck Div., Clark Equipment Co. (F-45)

Jib cranes—Information on the selection of jib cranes from Becker Crane & Conveyer Co. (F-46)

Materials handling—Solutions to unusual handling problems in publication from Towmotor Corp. (F-47)

Building maintenance—And sanita-

tion covered thoroughly in book published by the Association of American Soap & Glycerine Producers, Inc. (F-48)

Retirement—"A Preview of the Leisure Years" is title of book to condition employees to the idea of retirement. Retirement Education, Inc. (F-49)

Flexible packaging—Materials, methods, and uses described in fact sheet from Continental Can Co. (F-50)

Textile World

BOOK REVIEWS

PRICING FOR PROFIT AND GROWTH, by Albert J. Bergfeld, James S. Earley, and William R. Knobloch; McGraw-Hill Book Co., Inc., 330 W. 42nd St., New York 16, N. Y. $15.

How to price a product, how to market it, and how to introduce new products are topics covered in this latest Consultant Report.

The report offers practical advice on measuring the impact of price changes on buyers, competitors, and over-all sales volume.

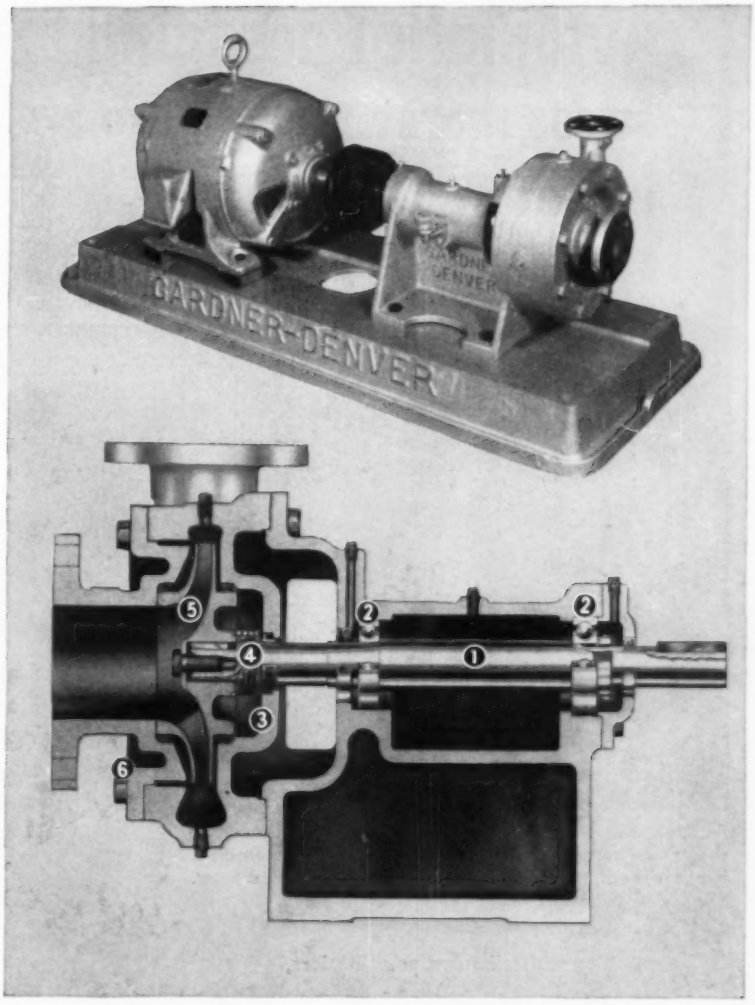
Legal aspects of the Robinson-Patman Act, the construction of equitable and profitable discount schedules, and the preparation of price and profit plans for a composite company are discussed.

The Consultant Reports are available singly or on a subscription plan. Subscribers receive reserved copies at $12.50 each.

HANDBOOK OF ORNAMENT, by Franz S. Meyer; Dover Publications, Inc., 920 Broadway, New York 10, N. Y.; 548 pages, paper, $2.

Over 3,000 line cuts of classical art motifs are a feature of this book. The various categories are accompanied by text that covers the history, origin, and development of the type of ornamentation illustrated.

While not primarily a book of tex-



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tile design, stylists, converters, and others looking for inspirations would do well to refer to this collection of classics that embodies the artistic efforts of several centuries and cultures in the field of decoration.

TEXTILE QUALITY CONTROL PAPERS, by the Textile Div., American Society for Quality Control; order from American Society for Quality Control, 6197 Plankinton Bldg., 161 W. Wisconsin Ave., Milwaukee 3, Wis. Textile Div. members, $2.50, others $5.

This collection consists of papers selected from those presented at the Seventh Annual Textile Division Conference of February, 1957, and papers from other meetings.

Subject matter ranges from spinning to weaving and presents the views of buyers and suppliers as well as delving into the application of statistics to quality control.

How quality-control plans are managed, how standards are set up, and how results are analyzed are covered. Practical applications of quality-control methods are discussed in papers that deal with piece goods and items manufactured from piece goods.

INTERNATIONAL AND INTER-REGIONAL ECONOMICS, by Seymour E. Harris; McGraw-Hill Book Co., 330 W. 42nd St., New York 36, N. Y.; 564 pages, $7.

In this volume, the serious student of world economics is presented with a review of the opinions and theories of distinguished economists since the time of Adam Smith.

How the theories of free trade evolved into those of comparative costs, which developed into the later ideas regarding international trade, are outlined in considerable detail.

The theories of Nassau Senior, Ricardo, Taussig, and Viner are examined and correlated with later work by John Stuart Mill, Marshall, Edgeworth, and others.

The complexities of world economics are described in terms of areas, people, and monetary systems. The effects of tariffs, wars, productivity, and controlled economics as they bear on long-term economic factors are thoroughly discussed and brought into relation with problems of disequilibrium that have developed since World War II.

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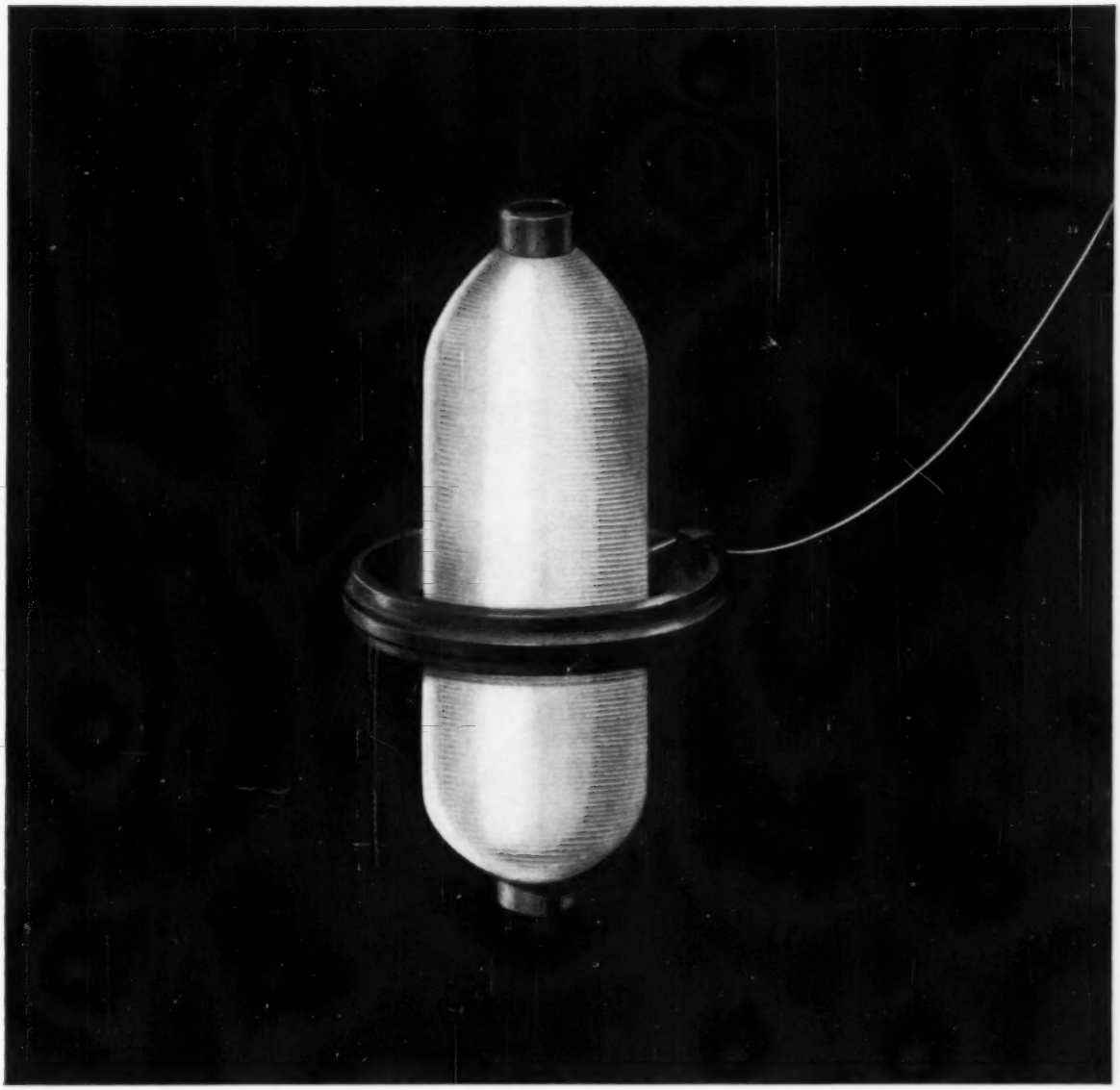

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CONTINUED FROM PAGE 101

average fiber diameter. Several thousand fibers are cut from wool sliver and laid on a microscope slide that is inserted in the grader.

The slide passes through a light beam, and each fiber is measured. The average diameter of 1,000 fibers is then computed and read from a recording dial.

A Schlumberger tester is used in another mill to test fiber lengths. Finished top is placed under a feed roll, and pulls are automatically made and placed on combs. Two rolls remove the different fiber lengths. These fibers are removed and weighed to give a true fiber diagram for adjusting machines.

Instruments Record Tension

Mills are learning how to get the most out of tension analyzers or recorders. These instruments measure the tension of yarn, roving, or sliver running to, from, or through a textile machine; and they record the tension on a chart.

The results shown on the charts are being used to spot and rectify such faults as spindles out of plumb, too-large ring diameters, and variations in spindle speed. Weaving and knitting mills, where tension control is important, should find many uses for these instruments.

More tension meters that measure the speed of yarn as the yarn passes to a winding or knitting machine are being introduced and improved. Yarn meters are becoming standard equipment in knitting mills and have largely replaced rule-of-thumb methods of leveling stitches. One mill uses a yarn-speed meter in conjunction with a meter that measures the length of yarn knitted in one or several courses.

Electronic yarn testers that count faults in yarn are providing spinning mills with a useful quality-control tool. Some of these instruments are used on the production machine without interrupting production.

An electronic slub catcher is being used in Europe on winding machines. The yarn is scanned 50-million times each second. When a slub is detected, the cutting mechanism receives a signal and cuts the slub out of the yarn. A counter also records the slubs that are caught.

Strength Testing Is Speeded

A yarn-strength tester that continuously tests yarns with a breaking strength up to 2,500 grams is now in use in spinning mills. Up to 70 tests can be run in about 20 mins.

A useful instrument for mills running filament yarns is used in England. The instrument electronically counts the number of filaments in a yarn. The operator simply clamps the yarn in the instrument, presses a lever, and reads the results on a counter.

Hosiery-testing devices are finding more-widespread use in quality-conscious mills. One such device automatically counts the stitches in 3 ins. of stretched fabric. This device is now being used in a knitted-fabric mill to keep a check on quality.

Another hosiery device that also reduces faults caused by human errors consists of an expanding frame over which full-fashioned and seamless hosiery are stretched. The form is expanded and the stocking finds its true length.

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Problems in testing properties of fabrics are being solved by various in-

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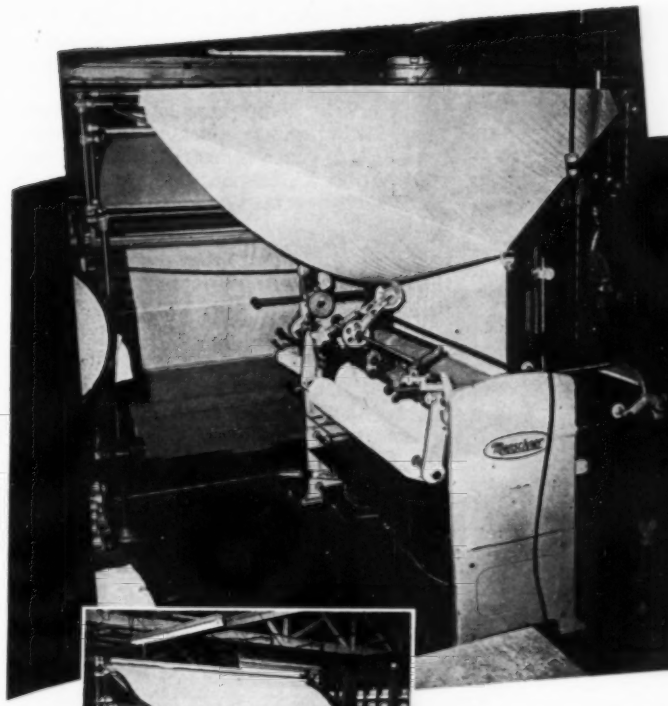

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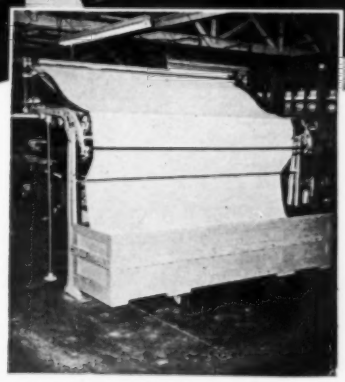

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struments. Stiffness of carpets, felts, and battings can now be measured on a machine that handles materials from $\frac{1}{8}$ to 2 ins. thick.

The ability of a fabric to recover from creasing can now be measured. A specimen is first creased under controlled conditions and is allowed to recover from the creasing while clamped on the machine. The recovery angle is read in degrees off a scale.

Pilling can now be measured on an instrument that produces pills or fuzz that correlate well with end-use performances. A 1-hr. test is equal to 300 hrs. of actual wear.

Some of the new electronic instruments are complicated and costly. Small mills don't like buying such instruments. Only the large mills can afford to hire electronic engineers. And mill men don't like bringing service men into the mill and doing without the services of an expensive instrument when it goes wrong. Such instruments must be simple and inexpensive to find widespread use in smaller mills.

CARDING

CONTINUED FROM PAGE 88

departments where it would do the most good in a hurry. Drawing and roving received most attention.

For example, Falls Mfg. Co. reduced its over-all labor cost 25% in one plant by concentrating on improvements in drawing, combing, and roving. Alma Mills cut its carding labor costs 41%, chiefly by installing one-process roving. Harriet and Henderson Cotton Mills increased production per manhour by putting in high-speed drawing. Ledbetter Mfg. Co. increased yarn production 30% by improving both carding and spinning.

Scores of other mills are profiting from carding improvements, and the trend should continue through 1958.

TASLAN YARNS

CONTINUED FROM PAGE 109

from $2\frac{1}{2}$-in. pipes that run down each side of the frame. The size of the jet is important. A larger jet has been found to give more pressure per square inch and do a better texturing job. An ideal jet is about 0.04 in.

The yarn passes through the jet, which is delicately set in the venturi to control the yarn flow. Jets are now being ceramic plated as insurance against excessive wear.

From the jet, the yarn runs through

Automatic Winders for Rewound Filling

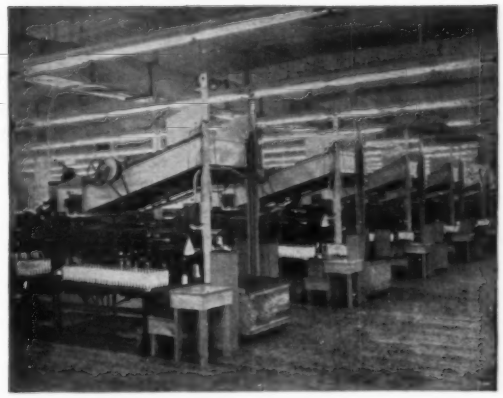
to take advantage of large package spinning, more yarn on filling bobbins, more uniform bunches, better weaving bobbins, and inspected yarn, all of which go to make a better fabric.

Abbott Traveling Spindle Package Winders

Automatic Cone or Tube Winders for warping, dyeing, twisting, quilling, sales.

Can be equipped with any one of a variety of slub catchers and inspection devices.

Production up to 1000 bobbins per hour per operator.



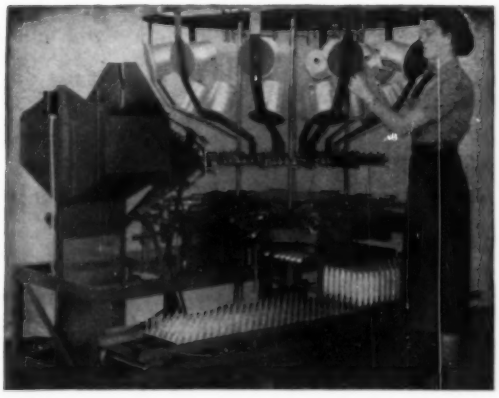
Abbott Traveling Spindle Automatic Quillers

For winding coarse cotton, worsted, woolen yarns, etc., equipped to doff automatically into baskets, or stack automatically into boxes.

Abbott Model II High Speed Automatic Quillers Over 10,000 RPM

For winding fine cotton, spun synthetics, filament rayon and nylon, etc. with automatic pinboard attachment or wide belt inspection conveyor, or bobbin stacker.

Production up to 2500 bobbins per hour per operator.



Abbott Fully Automatic Radial Quiller

For smaller lots and widely diversified mills.

For winding cotton, spun rayon, filament rayon, worsted, wool, etc.

Can be arranged to deliver bobbins to Pinboard Attachment, or into baskets, or into wide belt conveyor.

One operator can run several machines producing up to 2000 bobbins per hour per operator.

Can be equipped with measured yardage device for two-shuttle looms.

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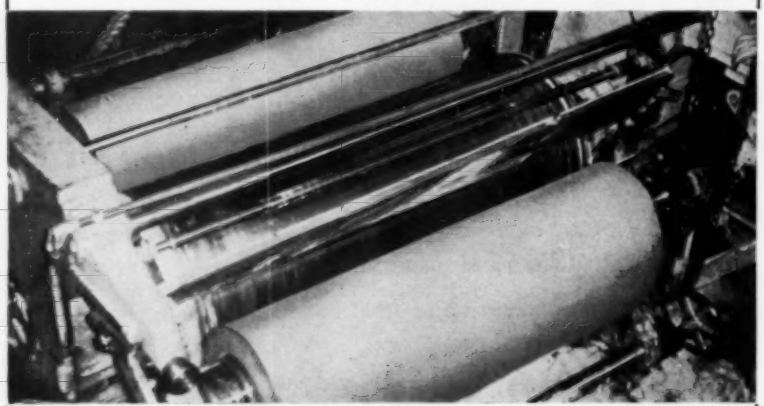

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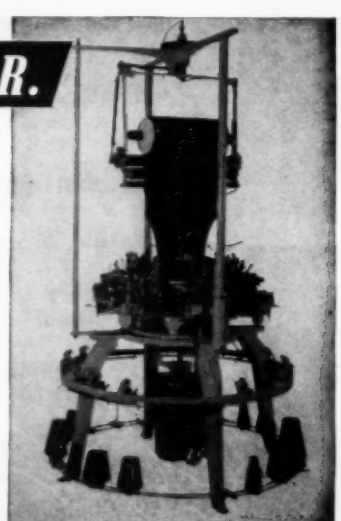

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a pigtail, through another gate tension, and is finally wound on a Bakelite tube. The take-up speed is controlled at 106 yds. per min.

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Air pressure is supplied by a Gardner-Denver 10x9-in. carbon-ring air compressor fitted with an air filter. Compressed air is forced into a storage tank at 70 to 80 psi.-ga.

Water traps throughout the system are blown out daily, and the last trap near the machine is kept open slightly to make sure that no water gets to the jets. A pressure regulator on each machine controls the pressure to 50 psi.-ga.

Each jet is cleaned with a fluid at each doff. The fluid is contained in a plastic bottle, which is held under the jet while the fluid is sucked through the jet.

One package is run to each doff. Each spindle produces about 2 lbs. per day. The packages are placed in a truck that holds 500 packages. This truck is pushed in a conditioning oven where the yarn is treated for 30 mins.

Textured yarns are sometimes twisted for special end uses. For instance, three ends of 77-den. nylon are twisted with 5 tpi. for men's and boys' hosiery. Most yarns, however, are not twisted after texturing.

Textured Yarn Is Checked

To check the denier after texturing, nine meters of yarn are weighed in milligrams when the machines are set up. The yarn is also checked for stability or permanent elongation.

Yarn from two tubes is wound on one 5° 57′ cone. The knots are always tied at the top of the cone.

Caps are placed on the tubes to keep the yarn from plucking. The yarn is not run through the oiling trough. After a close inspection, each cone is individually wrapped and packaged in divided cartons.

THICK PLACES IN YARN

CONTINUED FROM PAGE 149

that the best point of control to assure uniform yardage on the full bobbin is in the number of layers or traverses put on the bobbin.

"The number of layers for each hank roving," he reported, "should be determined in advance and the frame should be knocked off automatically when the proper number of layers is on the bobbin. The practice of blocking the shipper at knock-off time and running the frame a few more layers to fill the bobbins should be stopped

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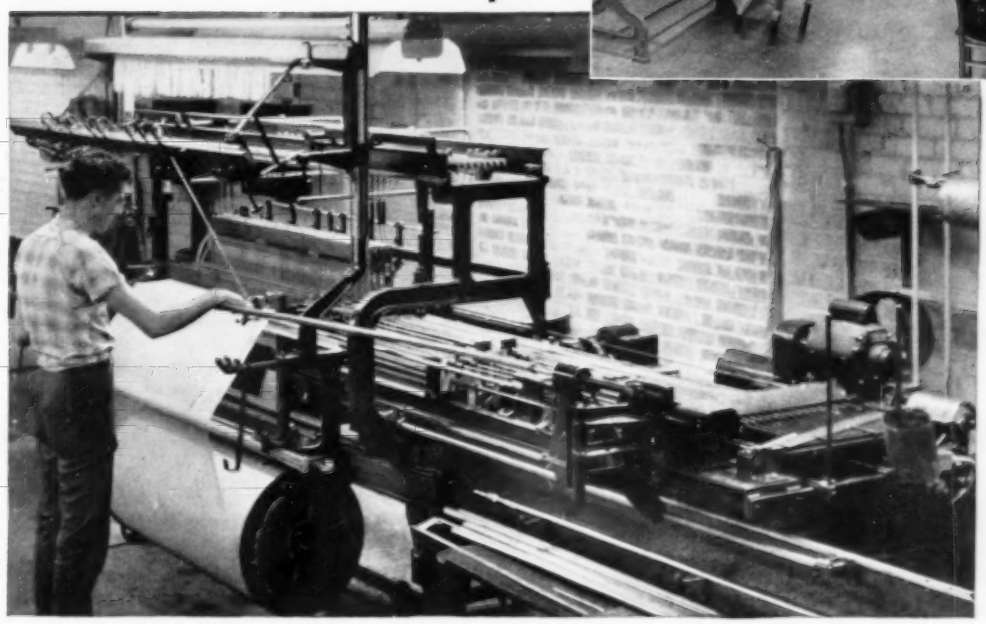

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With this machine, the time-eating task of drawing-in is speeded up tremendously. A power-driven needle, running at 127 to 230 strokes per minute (depending on the number of weaving elements to be entered), draws each thread in succession through the correct selection of drop wire, heddle, and reed dent. This correct selection is made accurately *and automatically* for each pick by a sequence of mechanical actions controlled by a pattern strip punched in accordance with the designer's draft. Very substantial reductions of drawing-in costs are possible, particularly on patterned goods such as stripes, plaids, and fancy weaves. This *modern method* of replacing warps has enabled many mills, both large and small, to meet the ever-increasing demands for a greater variety of patterns. *Your Barber-Colman representative is qualified to advise you on possibilities in your mill.*

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to prevent stretched roving on the outer layers."

After studying the trouble shooter's report, the mill decided to design and build a stop motion that would automatically stop the rail on the doff near the bottom of the set and in proper position for doffing. The new motion, if successful, would stop the operators from putting on extra layers while positioning the rail.

Knock-Off Motion Is Built

Efforts to build the stop motion in the mill shop were not successful; so the problem was turned over to a machinery builder. A special knock-off motion that fitted the mill's specifications was designed and built in cooperation with the mill.

After the motion was installed, the frames could be knocked off when a predetermined number of layers was put on the bobbin and when the flyers were near the bottom of the traverse. Jockeying of the shipper was eliminated.

The new motion made it possible to put 1.73 lbs. net of 1.25-hk. roving on each 10x5 slubber bobbin. The yardage stop motion at the finisher drawing was set to put 14 lbs. net of 66-grain sliver in 12-in. cans.

Drawing Waste Is 1%

With eight doffs to the can, drawing waste at the slubber averaged 1% and no dump cans were used. The small amount of waste made was reworked along with card-sliver waste.

The full-bobbin knock-off at the roving frames and the yardage control at the drawing frames together eliminated thick places in yarn, cut labor cost, reduced waste, and stopped stretched yarn.

POINTERS FOR SUPERVISORS

CONTINUED FROM PAGE 151

ute." Certainly he was able to build a fabulous career on this conviction. But we are not suckers about all things. Perhaps we can be lured into a tent to see a side show and be fooled by the oddities on exhibit, but that does not mean we are unable to distinguish fact from fiction.

On the job, in familiar surroundings, with people they know, employees are very keen at sensing where fact leaves off and fiction begins. I would not concede for a moment that any competent supervisor would deliberately mislead or give incorrect information to his subordinates. That is not the danger. But I would caution that under the pressures to which all supervisors are exposed, and out of the determination to turn in out-

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Mr. Manufacturer:

has direct distribution become too great a burden?

Recent studies prove that the more direct the distributive method, the greater the financial burden on the manufacturer. He must build and manage a sales staff large enough to contact thousands of retail outlets. He must maintain clerical staffs to check credit, orders, issue invoices, handle multiple small shipments, complaints, returned goods and to maintain warehousing facilities. He must divide his attention between production and specialized distribution. The wholesale distributor will take over all these worries.

Advantages of Using Wholesale Distributors

- Manufacturer cuts sales force, clerical costs.
- Manufacturer saves on storage, billing, credit costs, returned goods, inventory investment.
- Wholesalers put items into thousands of outlets at minimal cost and provide quick fill-ins.
- Wholesalers are close to retailers, understand their needs and keep them stocked up.
- Wholesalers smooth out delivery schedules, free manufacturer to concentrate on production.

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BUSINESS MAGAZINE EDITION

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Laurel SPOTTER AF-2 is extremely efficient, having minimum adverse effect on dyeing and finishing operations. Its action results by combining with the oil and grease in the spots, thus forming an emulsifiable combination. This is readily removed in normal scouring and boiling-off processes.

A little Laurel SPOTTER AF-2 goes a long way. It is easy to apply, and no rubbing is required. In fact, just enough Laurel SPOTTER AF-2 to cover the spot or streak will effectively do the job.

Give this new Laurel product a try and we think your problems in oil and grease spot removal will be over. You'll like its versatility, too, eliminating these spots on *whatever* fabrics handled.

Like a free sample of Laurel SPOTTER AF-2? Write today. No obligation, of course.

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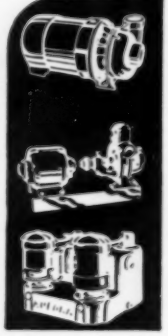

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standing performance, there is the possibility of overstating the case.

A problem develops, it clamors for attention, all available resources are marshalled to effect a solution. In such a circumstance, there is the possibility of overstating the case and going a little beyond what an objective appraisal, under calmer conditions, would warrant. Communications with employees could be hampered, if this were to occur with any frequency.

In large measure, employees must look to their supervisors for reliable information about the many things that can affect them on their jobs. How they themselves are performing, what's going on in the department or the company, what changes are taking place and why, what they can look for in the future—these questions and many others they hope to have answered by supervisors.

This is a big and serious responsibility for a supervisor. It is so important that it is worth taking the time for any supervisor to examine how well he is communicating with the employees of whose welfare he is the principal guardian.

EQUIPMENT & SUPPLY NEWS

CONTINUED FROM PAGE 178

Heating Troughs

Conveyors and blenders operated with spiral screws can be kept heated when necessary by means of a steam-jacketed trough developed by Dean Thermo-Panel Coil Div., Dean Products, Inc., 616 Franklin Ave., Brooklyn 38, N. Y. Embossed panels are bent to form the trough, and steam is led through the channels formed by the embossing. Suitable metals can be specified for the inside and outside of the trough.

Circle T-22 on Reader-Service Card

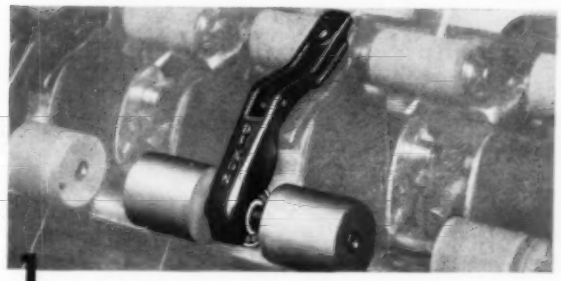
Electric-Motor Cleaner

A cleaner for motors, other electrical equipment, and oily machinery is furnished in a hand spray can by Stewart-Hall Chemical Corp., P. O. Box 66, Fleetwood Station, Mount Vernon, N. Y. The cleaner dries rapidly and leaves no film or vapor, will not short electrical equipment, is noncorrosive and nonflammable, and is safe for painted surfaces.

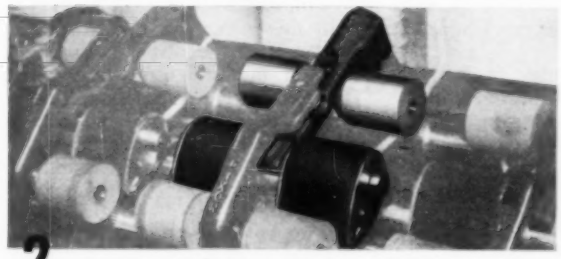
Circle T-23 on Reader-Service Card

CONTINUED ON PAGE 206

2-Step Installation of DIXON self-aligning Super Saddle Guide can spread out your investment



1. Install Dixon front roll and saddle combination to eliminate all front roll oiling. Throw away front cap bar blocks, major source of dirt and wear. Save money from the outset, get almost immediate return of full investment.



2. Add Dixon middle and back rolls and saddles to reduce drafting costs still further with elimination of all oiling; lessen cleaning requirements; spin stronger, more even, spotless yarns. Complete your installation this way any time — no parts wasted, no costly elements to throw away.

Proved By Over 100 Leaders

Dixon Saddle Guide assemblies for more than 1,000,000 spindles (Duo-Roth or Casablanca type spinning) have been proved in service by over 100 textile production leaders like Deering-Milliken (92,000 spdls.)

Cartex Mills (72,000 spdls.)
Martha Mills (38,000 spdls.)
J. P. Stevens (73,000 spdls.)

Dixon's complete changeover costs much less than any competing roll weighting device; eliminates all top roll cap bars and all oiling, is so perfectly engineered that misalignment is impossible.

Write for complete data on Dixon Super Saddle Guide

724-7

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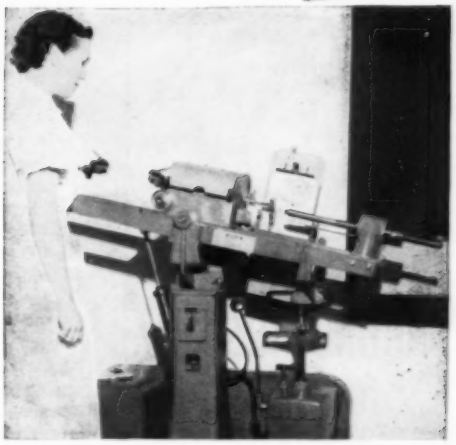

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Write for copy of article, "Aromatics In the Textile Industry".

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Air Currents in CARDS Pull Few Fibers From Wire

Recent carding tests made by the Budapest Technical University, Budapest, Hungary, show—

- **Pulling force of card wire is many times greater than the force of air currents**
- **Fibers are transferred between cylinder and lickerin regardless of the strength of air currents**

By G. MERENYI

THE FRICTION OR PULLING FORCE OF AIR CURRENTS on fibers during carding amounts to only a fraction of the pulling force of the main carding operation and has little effect on the transfer of fibers.

This conclusion is the result of a carding study made recently at the Department of Textile Technology, Budapest Technical University, Budapest, Hungary.

This study was made to check the theory that the main work in carding is done by the shearing force of the air layers moving between the cylinder and the flats. This shearing force, which depends on the kinetic viscosity of the air, the velocity of the air layers, and the clearance between the wire-clothing surfaces, was formerly thought to strip the lickerin wires almost by itself.

In 1949, P. M. Strang reported that the shearing force of the air on the fibers was 50,000 times greater than the centrifugal force. His calculation indicated that 8.7 dynes of force were exerted on each fiber by the air currents.

How the Test Was Made

To check Mr. Strang's theory and to compare the pulling force of the card wires with the shearing force of the air currents, matted clumps of cotton were removed from a picker lap and suspended on a torsion balance. Then a single fiber was pulled out of each clump by its projecting tip. Over 100 measurements were made in this manner.

The force required to pull out the fiber was measured on the balance after the weight of the cotton clump was deducted. Actual force needed to pull out each fiber averaged 572 dynes, compared with Strang's calculated 8.72 dynes exerted by the air currents.

After the physical tests were completed, the carding force produced by the card wires was calculated mathematically and found to be 6.78 dynes.

The time required for accelerating the mass of the fiber could not be measured, but it has a very definite effect on the pulling force. Assuming that one wire passes through the carding zone in 0.1 sec., a $\frac{3}{4}$-in. fiber would be removed in about 0.002 sec.

If the acceleration is almost instantaneous, the maximum pulling force of the wire may be anywhere from 100 to 1,000 times the calculated 6.78 dynes. Pulling force undoubtedly varies greatly with the grip of the fibers, friction conditions, tension, and other factors.

Pulling Force Fluctuates

These facts led to the conclusion that under normal mill conditions the pulling force of the wires fluctuates between 500 and 2,000 dynes. The force can be greater than the calculated figure but never smaller.

The next step was to calculate mathematically the pulling force caused by air currents. This force was found to be only 0.115 dynes.

The calculated pulling force (6.78 dynes) of the card wire is about 60 times as great as the calculated pulling force (0.115 dynes) of the air currents. The measured pulling force (572 dynes) is 5,000 times greater than the calculated pulling force of the air currents.

Air Currents Have Little Effect

The final conclusion is that the pulling force of air currents has relatively little effect on carding as compared with the pulling force of the wires.

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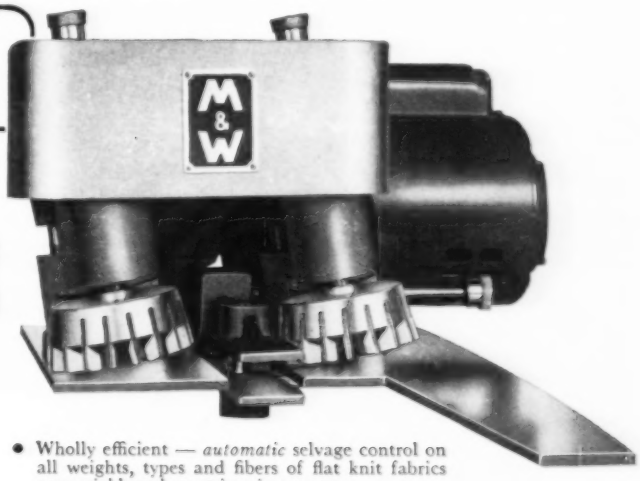

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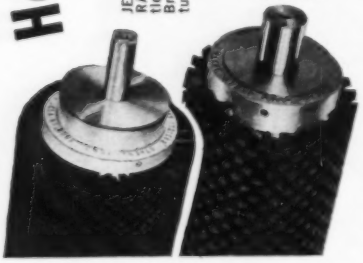

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Checklist Reduces Defects In SPOOLING and WARPING

• By following this checklist, you can eliminate many yarn defects in spooling and warping. The checklist will also help you decide which machine parts must be inspected frequently and which parts can run until your general inspection.

By JOHN E. ALLEN

WORN AND BADLY SET MACHINE PARTS cause many yarn defects in spooling and warping that can be entirely eliminated by the section man if he checks machines during his spare time.

But he must know (1) what parts cause trouble and (2) how the trouble is indicated. Use this checklist to guide your section man.

Spooling

Slack Bands
- Slow spindle speed
- Lost production
- Less yarn on spools
- Run-outs

Rough Creels
- Chafed yarn

Grooved Guides
- Chafed yarn
- Yarn held too rigidly
- Yarn loses elasticity

Guides Set Wrong
- Poorly built spools
- Too much tension on the yarn

Guide Spaced Unevenly
- Yarn does not pass through the guides on spools nearly full
- Bunches form on spools

Holders out of Alignment
- Variation in yarn tension
- Excessive end breakage

Dull Hand-Knotter Blade
- Slipping knots

Lifter Rods Sticking
- Poorly built spools

Loose Brackets
- Traverse rod throws guides out of position

Bent Spindles
- Strained yarn

Lost Spindle-Rod Caps
- Waste and grit in spindle base
- Worn spindle

Rough or Broken Spool Heads
- Slivers stick into operators' hands

Worn Spool Bushings
- Spools vibrate on spindles
- Yarn is strained

Grooved Yarn Guides
- Chafed yarn

Grooved Tensioning Device
- Variation in tension on yarn on spools

Tensioning Wires Set Wrong
- Strained yarn

Grooved Traverse Rods
- Yarn held too rigid
- Yarn elasticity is lost
- Chafed yarn

Misaligned Traverse Rods
- Guides are set at different angles
- Poorly built spools

Warping

Worn Batcher Rolls
- Variation in yarn tension
- Variation in amount of yarn on spools

Misaligned Beam Arms
- Variation in yarn tension
- Variation in yarn build-up at the end of the beam

Creels Not Level
- Creel packages do not set straight
- Creel packages do not turn freely

Grooved Creel Supports
- Chafed yarn

Grooved Combs
- Chafed yarn

Stop Motion out of Fix
- Ends out

Bent Stop-Motion Bars
- Bars do not touch drop wires
- Machine does not stop at broken ends

Grooved Drop Wires
- Yarn is held too rigidly
- Yarn elasticity is lost
- Chafed yarn

Beams Too Narrow
- Bad selvages

Grooved Front Roll
- Unevenly spaced ends
- Uneven beams of yarn

Slipping Measuring Roll
- Variation in yardage of yarn on beams
- Excessive waste of slashers.

Worn Yardage Counter
- Variation in yardage on yarn beams
- Excessive waste at slasher
- Backlash in counter

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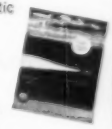

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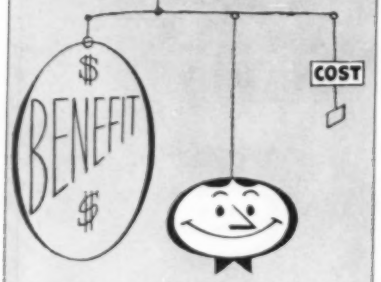

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Stretching Yarns Too Much Can Cause WEAVING Trouble

Stretching cotton yarn at the slasher should be controlled to avoid—

- Decreased weaving efficiency
- Excessive warp end breakage
- Increased shrinkage in finishing
- Variation in breaking strength

MANY WEAVING PROBLEMS can be traced directly to the slasher. One way slashing adversely affects weaving is by stretching the warp yarn. Tests made in a number of mills have shown that 2% is about the maximum that cotton yarn can be stretched without damage. For most yarns 1½% stretch is best.

Excessive stretching of the yarn will cause it to lose its elasticity. As a result, the yarn cannot stand the stress of weaving and many ends will break at the loom. Cloth woven from stretched yarn will have lower breaking strength and will have variation in shrinkage during the finishing processes.

Too much stretch applied to the yarn in slashing will affect the quality of the cloth and the efficiency of the looms. If the yarn is stretched tightly when the size is applied, the later relaxing of the fibers will break down the film of sizing. Then the yarn will be weakened, and increased shedding will result.

Stretch Is Checked on Each Set

Aware of the troubles caused by uncontrolled stretch, most mills have a system to test and prevent this condition. On slashers equipped with multimotor drives, stretch is electronically controlled at a predetermined percentage. On most slashers that do not have a multimotor drive, stretch is controlled by weights on the section beams and by varying the thickness of cloth wrapping on the delivery roll.

Most mills check the stretch at the beginning of each new set, although some only spot-check once a week or at greater intervals. There are a number of stretch-checking methods in use.

The most common is the wet-yarn checking system. A yardage counter is placed at the size box, and another counter is placed at the delivery roll. One hundred yards of yarn is fed through the size box, and the number of yards over 100 that is delivered is the percentage of stretch.

Colored String Used as Marker

At some mills the back yarn counter is placed at different points, from the back section beam to the back drying can or cylinder. Some mills also check the stretch between various points such as back to front of creel, through size boxes, from one cylinder to another, etc.

One mill uses a contrasting colored warp to get precise measurement of yarn from the back beam in the creel to the loom beam. Another mill figures the stretch of each set by subtracting the yards of yarn on the section beams from the yards of yarn slashed.

Whatever the method, schedule, or procedure, most mills have found that the control of stretch has far-reaching effects on weaving efficiency, quality of cloth, and morale of employees. So stretch is a subject that will continue to receive much attention from mill men and suppliers.

From an Alabama Textile Operating Executives meeting, Auburn, Ala.

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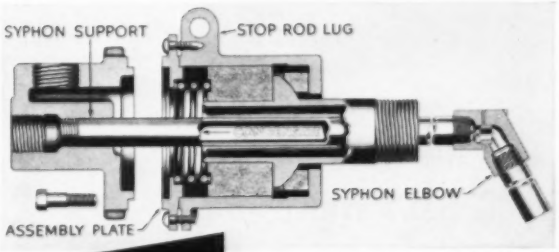

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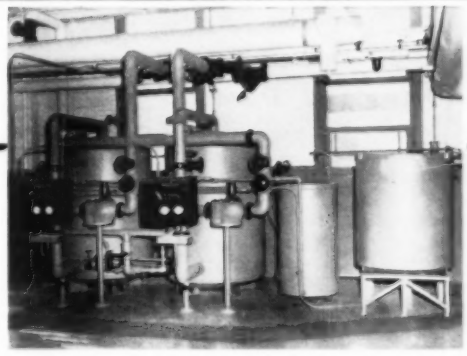

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When and How To Lubricate TRICOT Machines

Here are tips on—

- Checking oiling systems
- Dealing with rusty bearings
- Oiling guide-bar hangers

By JOHN A. WERTMAN

MODERN TRICOT MACHINES run at very high speeds, and machine builders have incorporated efficient oiling devices that have taken a lot of responsibility from the shoulders of maintenance people. These automatic devices are frequently overlooked, and they sometimes serve to reduce attention to correct lubricating practices.

Modern oiling systems give a steady lubrication to cams and bearings, but they should be checked at the end of each warp for defects. Machine vibration causes wear and tear on the small-diameter tubes leading to the parts to be oiled.

These tubes become cracked or flattened by accidents. Such an accident may cause a partial or complete stoppage of the tube. Replace such damaged parts immediately while the warp is out.

This action will cost less time than a replacement of a burned-out camshaft bearing. No production time is lost if the check is made at the end of each warp.

Check the pump that maintains the oil level in the system at least once each shift.

How To Deal With Rust

If a bearing shows rust discharge, give it immediate attention. A number of bearing solutions can be used but regular gasoline will serve in an emergency.

Inject a small amount of the solution in the bearing, and run the machine for a few minutes. Then oil the machine with the regular lubricant. Repeat the process several times until the bearing discharges reasonably clear oil. This fault is more likely to occur on machines running cotton and other staple yarns.

Replace babbitt linings on bearings that are cut or worn. These bearings can also be replaced with roller bearings for longer life. Lubrication schedules are of no use if bearings and other parts that need lubrication are in bad condition.

Some modern tricot machines have camshafts that run in an enclosed oil bath. This feature eliminates separate camshaft lubrication, but the oil level must be constantly maintained.

Pattern wheels on most modern machines run in an oil bath, and old machines that do not have this equipment should be provided with oil baths. An oil bath should also be provided for pattern chains.

Build Canopy Over Chains

A canopy over the chains or wheels will keep oil from splashing and wasting. The canopy can be made to drain the splash back into the oil bath.

Camshaft bearings, handwheel shafts, and pattern-wheel shafts on machines that are oiled by hand should be lubricated at least twice each 8-hr. shift.

Keep a light film of oil on the surface of each cam. All other parts of the machine must be oiled at least once each shift.

Guide-bar hangers need special attention. Ordinary oils will stain the cloth or the threads and will give trouble in dyeing. Use plain white vaseline, which will scour easily and cause no stain.

Apply a light film of needle oil on sinkers, needles, guides, and sley points when machines are taken out of production for more than 48 hrs. Apply the oil to a machine with or without warps.

Observing these points will prolong the life of your machines and will help make better fabrics.

Better Lighting Helps Both Management and Workers

In recent years, surveys of both large and small industrial plants throughout the country have indicated that lighting is generally below modern standards. Lighting is being improved in newer plants, but a great many industrial operations need extensive relighting.

Today many industrial engineers claim that lighting is one of the most important production tools in industry.

In the past, first consideration was often given to the machine, not to the worker. In recent years, however, the "human plant" has been receiving a greater share of attention.

Lighting Has Two Objectives

There are two basic objectives in industrial lighting:

1. To provide enough general lighting for safe and uniform illumination throughout the working area
2. To provide enough supplementary lighting for proper levels of illumination in restricted areas in accordance with the task being performed

The advantages of good lighting in any industrial lighting are—

1. To employees: easier seeing, less eye fatigue, faster perception, maximum eye comfort, better working conditions, and improved morale
2. To management: less spoilage, fewer accidents, safer facilities, greater production, and a better-quality product

Nine Questions To Ask Yourself

If you plan to relight your plant, here are nine check questions to ask yourself:

1. Are arrangements provided for special seeing tasks, including local lighting?
2. Are you arranging brightness for visual comfort?
   a. Are lamps concealed from view at low levels?
   b. Do fixtures provide for an upward indirect component of light?
   c. Do fixtures furnish special diffusion to induce glaring reflections from the work?
   d. Do colors on machines and room surfaces provide low-contrast-brightness ratios?
3. Are you planning proper wiring?
   a. Is wiring adequate for possible greater future requirements?
   b. Are switches flexible for departmental work?
4. Does the lighting of stairways meet the need for traffic and safety requirements?

Good Lighting Is Many Things

5. Is suitable lighting such as vaporproof lighting provided for hazardous areas?
6. Are auxiliary areas such as yards and loading docks properly lighted?
7. Is night lighting for watchmen adequate?
8. Is emergency lighting on an independent circuit?
9. Is equipment selected well suited for cleaning, relamping, and possible repairs?

You will see that many of these questions refer to the quality of the lighting and that there is much more to good lighting than the minimum levels of illumination.

Lighting Has Many Basic Benefits

In solving the everyday problems that constantly come in running a plant, you cannot overlook proper lighting. Good lighting and worker efficiency go hand in hand. Therefore it is well to frequently re-examine the basic benefits of proper lighting. Proper lighting:

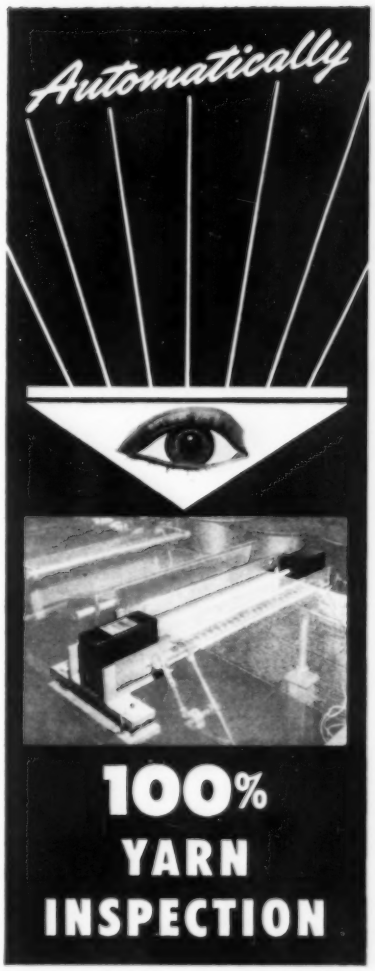
1. Cuts production cost by increasing the output of each worker

Production of small parts in a pattern shop of a machine-tool company increased 15% with improved lighting. After lighting was substantially increased, production jumped 25% for a piston-ring manufacturer.

2. Cuts production cost by reducing accidents

Plant safety engineers agree that one-fourth of all industrial accidents are caused either directly or indirectly by faulty lighting.

When a large company in Milwaukee relighted its plant, accidents decreased 16.5% throughout the entire plant and 32% in the erection



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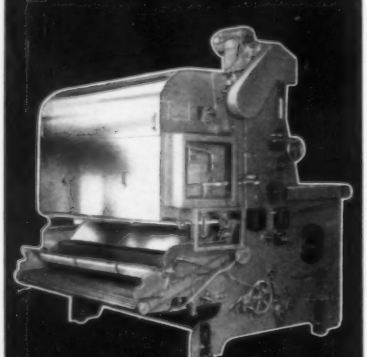

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shops. Repainting resulted in a further decrease of 12% in the entire plant and 16.5% in erection shops. The total decrease in accidents was 26.5% for the entire plant and 43% in the erection shop.

3. Cuts production cost by reducing rejects and spoilage

When workers can see properly, they make fewer mistakes. Relighting of a machine shop decreased rejects from 17% to 9% and at the same time increased production per man-hour 34%.

4. Improves employee relations and morale

Bright, well-lighted working areas reduce fatigue and create a more-cheerful atmosphere.

A Midwestern firm reports, "With better lighting, employees enjoy their work more. They are willing to work longer hours and now put in overtime to get a job finished."

5. Helps keep older, more-experienced employees productive

Glasses are worn by 67% of all adults. Although good lighting cannot correct defective vision, it helps employees with defective vision see better.

In older people, the eyes require an extraordinary amount of light; for example, the eyes of a 50-year-old person admit only a little more than half as much light as the pupils of a 20-year-old.

In one test, an increase in level of illumination resulted in a 14% increase in the work rate for a group with better eyes; the group with the worst eyes increased its work rate 22%.

Lighting Efficiency Will Increase

The trend toward still better industrial lighting is evident in all areas. Educational efforts toward creating greater awareness of industrial-lighting-level standards are beginning to take effect. Intensities of 100 to 200 ft.-cs. are anticipated within the next few years.

For operations calling for critical or very fine seeing, the trend is toward even higher lighting levels.

Automation will have an increasing influence on industrial-lighting concepts. In plants with extensive automation, lighting has already been improved. And as automation calls for more highly skilled employees such as engineers, draftsmen, and maintenance men, adequate standards of lighting become more important in profitable and practical industrial operation. *Certified Lighting, National Lighting Bureau*

EQUIPMENT & SUPPLY NEWS

CONTINUED FROM PAGE 196

Portable Mixer

A 25-gal. model of the Hydromixer is being offered by Pako Corp., 1010 Lyndale Ave., North, Minneapolis 11, Minn.

The tank is made from high-impact white plastic mounted on a corrosion-resistant base.

The unit mixes dyes or chemicals by means of jet impingement and will deliver solutions at a rate of 17 gals. per min. to a height of 12 ft. through one centrifugal pump.

Circle T-24 on Reader-Service Card

Filter Felt

A nonwoven filter felt made from Dynel and a thermoplastic fiber binder has been marketed by American Felt Co., Glenville Rd., Glenville, Conn. The felt is capable of retaining extremely small particles without plugging and is highly resistant to chemicals.

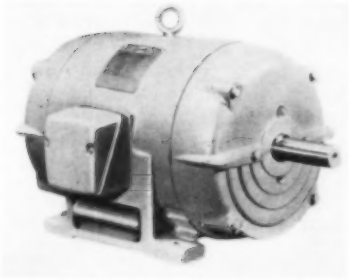
Circle T-25 on Reader-Service Card

Vat-Dye Kits

Complete materials for dyeing small lots of fabric in laundry-type machines have been made available in kit form by American Aniline Products, Inc., a unit of Koppers Co., Inc., 901 Koppers Bldg., Pittsburgh, Pa. A selection of vat colors is offered, along with the necessary caustic, hydro, and sodium perborate to dye 100- or 200-lb.

loads. Complete instructions accompany each kit.

Circle T-26 on Reader-Service Card



Synchronous Induction Motor

A 10-hp. synchronous induction motor in the 256 U-frame has been announced by Louis Allis Co., Dept. P. 427 E. Stewart St., Milwaukee 1, Wis.

The motor is for applications that require constant speed with varying loads and is said to be particularly effective in the manufacture of man-made fibers.

When used as a conveyor drive, the motor insures an exact constant-speed or adjustable-speed system from no load to full load with a minimum of driving units and controls.

The 10-hp. rating is at 1,800 rpm. Other sizes are 1 through 100 hp. All the motors can be mounted vertically or horizontally.

Circle T-27 on Reader-Service Card

Rotating Forks

Lewis-Shepard Products, Inc., Watertown, Mass., announces the availability of 360° rotating forks on its model JFTT electric fork truck. The attachment enables the operator to pick up a box and rotate it in either direction to dump it.

Circle T-28 on Reader-Service Card

Plastic Valves

General-purposes valves designed to withstand high temperatures and pressures too severe for ordinary plastic materials are announced by Chemtrol Corp., 11,008 Santa Fe Ave., Lynwood, Calif.

Circle T-29 on Reader-Service Card

Temperature Controllers

Thermistors actuate a line of temperature controllers made by Fenwal, Inc., Ashland, Mass.

Circle T-30 on Reader-Service Card

Reducing Valves

Two low-pressure-type reducing valves for industrial hydraulic systems are announced by Vickers, Inc., Box 302, Detroit 32, Mich. The units are capable of providing any controlled outlet pressure from 25 to 1,000 psi.

Circle T-31 on Reader-Service Card

Open Ball Bearing

A linear ball bearing, developed by Thomson Industries, Inc., Manhasset, N. Y., permits the use of shaft-support members along the length of the shaft traversed by the bearings and is recommended where extreme rigidity or unusually long shafts are required.

Circle T-32 on Reader-Service Card

Tramp-Metal Detector

A metal detector that automatically signals the presence of unwanted tramp-metal particles in nonmetallic materials, either packaged or bulk, is available from J. W. Dice Co., Englewood, N. J.

Circle T-33 on Reader-Service Card

Hand Truck

An adjustable model hand truck especially suitable for handling large, bulky, flat crated goods such as plate glass, sheet metal, wallboard, and similar material is available from Rol-Away Truck Manufacturers, Inc., 6143 S. E. Foster Road, Portland 6, Ore.

Circle T-34 on Reader-Service Card

Electric Scale Control

A minute electric current is used to convert scale-forming chemicals to a powdery consistency in a device developed by Electric Scale Control, Inc., 2026 E. 22nd St., Cleveland 15, Ohio.

Circle T-35 on Reader-Service Card

Ultraviolet Lamps

Several types of ultraviolet ray producers suitable for many textile purposes have been marketed by Black Light Corp., 685 S. Carondelet, Los Angeles, Calif.

Circle T-36 on Reader-Service Card

Water Conditioner

Minerals and salts are kept from accumulating in water systems by a device marketed by Packard Water Conditioner Div., Jacksonville, Fla.

Circle T-37 on Reader-Service Card

CONTINUED ON PAGE 208

Every Textile Mill Needs

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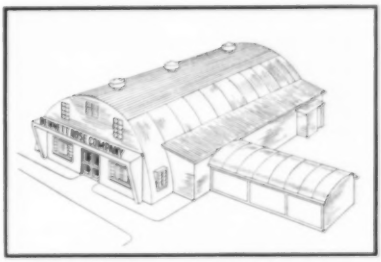

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DEODORIZES
For free sanitary survey of your premises ask your Dolge service man
Dependable DOLGE
WESTPORT, CONNECTICUT

EQUIPMENT & SUPPLY NEWS

CONTINUED FROM PAGE 207

Temperature Control

An instrument that can control temperatures in up to 10 different areas has been announced by Thermo Electric Co., Inc., Saddle Brook, N. J.

Circle T-38 on Reader-Service Card

Floor Switch for Doors

A switch controlled from a mat to be placed in a floor opens and closes doors. It is operated by 110 v. The manufacturer is Robot Appliances, Inc., 7041 Orchard St., Dearborn, Mich.

Circle T-39 on Reader-Service Card

Electronic Weighing System

A weighing system developed by Toledo Scale Co., 1201 Telegraph Rd., Toledo 1, Ohio, performs several weighing and accounting jobs: it (1) weighs a package, (2) transfers the weight to a tabulator card punch, (3) subtracts the tare from gross weight to obtain the net weight, and (4) multiplies this result by a factor to secure a final billing figure.

Circle T-40 on Reader-Service Card

Dump Truck

To consolidate the collection and disposal of trash in large plants, Market Forge Co., Everett, Mass., has designed its Loadmobile dump truck with a rated capacity of 1,000 lbs. and a speed of 4 mph.

Circle T-41 on Reader-Service Card

Stapling Machine

Jumbo staples are fastened in containers by foot power in a stapler introduced by Container Stapling Corp., Herrin, Ill. The Model BSF-Turbo unit is easily portable and of very simple design.

Circle T-42 on Reader-Service Card

Industrial Cleaning Solvent

A nonflammable solvent to remove oil, grease, and dirt without harming delicate metal parts or electrical insulation is available from E. I. du Pont de Nemours & Co., Inc., Wilmington, Del.

Circle T-43 on Reader-Service Card

Lift Truck

A multipurpose lift and drum-stacker truck is offered by American Pulley Co., 4200 Wissahickon Ave., Philadelphia 29, Pa. The truck combines fork, platform, and drum-handling attachments with a straddle-type lift truck.

Circle T-44 on Reader-Service Card

Floor Trucks

A line of noncorrosive, bin-type floor trucks in stainless steel or aluminum is available from Lewis-Shepard Products, Inc., Watertown, Mass.

Circle T-45 on Reader-Service Card

Toggle Switch

A rotary toggle switch that controls many circuits with single-motion mechanical activation is announced by Micro Switch Div., Minneapolis-Honeywell Regulator Co., Freeport, Ill.

Circle T-46 on Reader-Service Card

Industrial Controls

Tipp Mfg. Co., Tipp City, Ohio, announces a line of controls for any chemical or mechanical condition that can be measured electrically. Among the functions that can be controlled are voltage, current, torque, timing, pressure, temperature, liquid level, speed, depth, light, sound, and deflection.

Circle T-47 on Reader-Service Card

Temperature Regulator

Klipfel Valves, Inc., Hamilton, Ohio, announces a self-actuated vapor-pressure temperature regulator that provides control for installations where danger of overheating, product spoilage, or equipment damage is possible.

Circle T-48 on Reader-Service Card

Fork Truck

An electric-powered, stand-up-type, center-control fork truck with a capacity of 10,000 lbs. is announced by Elwell-Parker Electric Co., 4205 St. Clair Ave., Cleveland 3, Ohio.

Circle T-49 on Reader-Service Card

CONTINUED ON PAGE 209

EQUIPMENT & SUPPLY NEWS

CONTINUED FROM PAGE 208

Packing Gland

Announcement of its Conax aluminum packing gland for positive sealing of wires, tubes, rods, and other material is made by Conax Corp., 7811 Sheridan Drive, Buffalo 21, N. Y.

Circle T-50 on Reader-Service Card

Industrial Fans

Three fans for various industrial application are announced by Buffalo Forge Co., Buffalo, N. Y. Included are radial-blade and airfoil-blade fans.

Circle T-51 on Reader-Service Card

Edge-Guide Unit

An improved edge-guide unit for light-duty service on plastics and textiles, is available from Askania Regulator Co., subsidiary of General Precision Equipment Co., 240 E. Ontario St., Chicago 11, Ill.

Circle T-52 on Reader-Service Card

Magnetic Handling Plate

A magnetic attachment for industrial lift trucks to insure fast, safe handling of metal plate is announced by Yale & Towne Mfg. Co., 11,000 Roosevelt Blvd., Philadelphia 15, Pa.

Circle T-53 on Reader-Service Card

Generator-Powered Truck

Yale & Towne Mfg. Co., 11,000 Roosevelt Blvd., Philadelphia 15, Pa., has developed an engine-generator battery-power unit for its Warehouser trucks. The unit permits long runs without battery charging and is compact for use in narrow aisles and on ramps.

Circle T-54 on Reader-Service Card

Electronic Timer

An electronic timer that will control timed operations from 60 milliseconds to 60 secs. and is adjustable to any fraction of this range is avail able from General Control Co., Boston, Mass.

Circle T-55 on Reader-Service Card

CONTINUED ON PAGE 210

Fairbanks 5 Cost-Cutters For Your Light, Bulky Materials Handling Jobs

rugged construction and smoother operation take the load off your mind . . .

9215-S General Purpose Truck — more widely regarded as a **necessary tool** in shipping rooms, stores, warehouses, passenger baggage terminals and with transfer and express companies — for use on delivery trucks—where it is unsurpassed for handling small lot merchandise including round objects. Steel framed construction.

A-1448 Utility Truck — very popular in stores, offices, institutions, shipping rooms and factories for carrying small lot merchandise and widely used in bottling and beverage plants and on beverage delivery trucks for moving case lots. All steel welded construction, fitted with stair climber.

Lift Jack Platform Trucks — perfect answers for minimum cost temporary storage of raw material, parts, semi-finished goods or finished pieces. Jack handle has no moving parts — engages and disengages semi-live skid simply and quickly. One jack handle sufficient for a number of platforms.

"Bantamweight" Platform Trucks — outstanding values for lightweight materials handling from low initial cost through minimum operating expense. Readily adaptable to continuous conveyor systems. Light and strong construction, very mobile on Fairbanks "Lockweld" Double Ball Race Swivel Casters and matching rigid casters.

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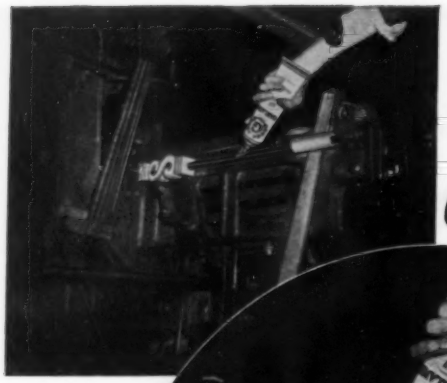
For more data, write this page number on Reader-Service card. →



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EQUIPMENT & SUPPLY NEWS

CONTINUED FROM PAGE 209

Let-Off Stands

A let-off stand that will accommodate rolls of fabric or other materials from 32 to 70 ins. wide has been announced by H. G. Weber & Co., Kiel, Wis. Motorized spindle supports are adjustable to accommodate the width of material being unwound. Manual or automatic edge-alignment controls are available.

Circle T-56 on Reader-Service Card

Fume-Resistant Impeller

Fumes from acetate, viscose, or other extrusion products have no effect on an impeller made by Homalite Corp., 11-13 Brookside Dr., Wilmington, Del. The unit is cast from an epoxy-resin compound and is resistant to acids, alkalis, and most solvents.

Circle T-57 on Reader-Service Card

Automatic Gauge

An automatic sensitive gauge that measures, records, and maintains the level of fluids in tanks, bins, kettles, or furnaces is being made by General Glass Equipment Co., Atlantic City, N. J.

Circle T-58 on Reader-Service Card

pH Meter

A line-operated pH meter that covers the entire pH range and operates directly off any 100- to 125-v. 50- to 60-cycle a.c. line has been announced by Photovolt Corp., 95 Madison Ave., New York 16, N. Y. The meter can be supplied with or without the usual electrodes or with a combination electrode.

Circle T-59 on Reader-Service Card

Radiant-Heat Mat

A flexible heating mat built up of Fiberglas-covered nichrome wire has been marketed by Zack Industries, 185 Goffle Rd., Hawthorne, N. J. The units provide local heat for industrial purposes and are supplied in a variety of widths and lengths to suit requirements and in watt densities to 8 w. per sq. in. or more.

Circle T-60 on Reader-Service Card

NEWS ABOUT SUPPLIERS

ALLIED CHEMICAL & DYE CORP., SOLVAY PROCESS DIV., New York, N. Y.—Has appointed W. H. Brumfield and C. P. Hackett vice presidents. H. G. Phillipps, Jr., has been named manager of the Syracuse, N. Y., sales branch. . . . **ALUMINUM GOODS MFG. CO.**, Manitowoc, Wis.—Has changed its company name to Mirro Aluminum Co. . . . **AMERICAN AIR FILTER CO., INC.**, Louisville, Ky.—Has announced that a proposal has been approved by which the company will acquire all the shares of stock of Kennard Corp., St. Louis, Mo. Kennard Corp. will be operated as a wholly owned subsidiary with no changes in personnel and policies. F. K. Platt has been named central regional manager for all products of American Air Filter Co. . . . **AMERICAN CYANAMID CO.**, New York, N. Y.,—Has appointed D. Collette manager of manufacturing for the Plastics and Resins Div. V. J. Wilhousky succeeds Mr. Collette as plant manager of the Wallingford, Conn., plant. N. L. Levin has been appointed senior sales and merchandising representative for the Fibers Div.

WALTER R. GILSDORF (left) has been named general sales manager of Spaulding Fibre Co., Inc., Tonawanda, N. Y. JOHN M. FEELEY (center) has been appointed sales manager of Dixon Corp., Bristol, R. I. MARVIN H. SMITH, JR., (right) has joined Southern Sizing Co., East Point, Ga.

AMERICAN MONORAIL CO., Cleveland, Ohio—Has promoted H. A. Rehfeld to sales manager of the Eastern Div. . . . **AMERICAN VISCOSE CORP.**, Philadelphia, Pa.—Has appointed Dr. C. J. Geyer, Jr., director of the Technical & Textile Service Dept. . . . **BAKER-RAULANG CO.**, Cleveland, Ohio—Has appointed R. T. Tiebout director of sales and R. J. Laws assistant director of sales. . . . **BECKMAN INSTRUMENTS, INC., SYSTEMS DIV.**, Anaheim, Calif.—Has appointed R. S. Rosenast production manager. C. Neisser has been appointed manufacturing manager. . . **BRISTOL CO.**, Waterbury, Conn.—Has announced that W. J. Frair has joined the Application Engineering Dept. . . . **CHEMSTRAND CORP.**, Decatur, Ala.—Has appointed D. A. Walen merchandising development manager in the Advertising, Merchandising, and Promotion Dept. J. J. Egan has been named sales representative, assigned to the New York office.

COLSON CORP., Elyria, Ohio—Has announced that its sales headquarters for casters and institutional products have been moved to Jonesboro, Ohio. The Special Products Div.'s sales headquarters are now located at the plant in Somerville, Mass. . . . **CORN PRODUCTS REFINING CO.**, New York, N. Y.—Has promoted R. C. Wheeler and A. S. Wells to vice presidents. . . . **CRUCIBLE STEEL CO. OF AMERICA**, Pittsburgh, Pa.—Has announced the establishment of an export sales and service company, Crucible Steel International, S. A., with headquarters in Nassau, Bahamas, B. W. I. A. Matticks has been appointed manager of product development for the Stainless Steel Sales Div. . . . **CUTLER-HAMMER, INC.**, Milwaukee, Wis.—Has appointed T. J. Manning plant manager of its new plant now under construction at Lincoln, Ill.

DAVIS & FURBER MACHINE CO., North Andover, Mass.—Has bought a substantial interest in Methuen Card & Napper

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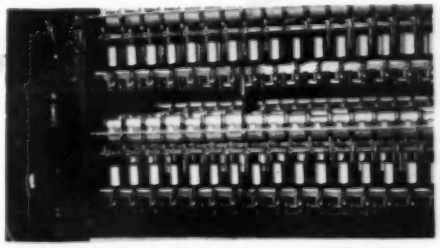

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NEWS ABOUT SUPPLIERS Continued

Clothing Co., Inc., Columbus, Ga. . . . **DEWEY & ALMY CHEMICAL CO.**, Cambridge, Mass.–Has appointed J. W. Miller, Jr., manager of the Central Services Div. . . . **DIAMOND ALKALI CO.**, Cleveland, Ohio–Has announced that L. R. McCoy has returned to the company's national headquarters as assistant to the manager of chlorine and hydrogen sales. . . . **DOW CHEMICAL CO.**, New York, N. Y.–Has named A. Greenfield manager of merchandising and J. A. Jones, Jr., manager of field sales for Zefran. . . . **E. I. DU PONT DE NEMOURS & CO., INC.**, Wilmington, Del.–Has named H. A. Lips manager of the paper-sales section of the company's Dyes & Chemicals Div. R. L. Hershey has been elected a director, vice president, and member of the executive committee of the company.

HARTFORD MACHINE SCREW CO., Hartford, Conn., has built a new manufacturing plant (shown above) just outside of Greenville, S. C. The plant produces spindles and bobbin hangers. This 20,000-sq.-ft. facility is now in full production of textile equipment formerly produced in Connecticut and represents an investment of half a million dollars.

EASTMAN CHEMICAL PRODUCTS, INC., Kingsport, Tenn.–Has announced that G. C. King has been transferred from the New York office to Kingsport, Tenn. A. C. Clow has been named sales representative in the New England territory with offices in Providence, R. I. R. H. Norrell and W. H. Smith have been named sales-development representatives for experimental fibers. . . . **FABULIZED, INC.**, Philadelphia, Pa. –Has named R. P. Rhodes Mid-Atlantic divisional sales manager. . . . **FLETCHER WORKS, TEXTILE DIV.**, Philadelphia, Pa.–Has redesigned and expanded its showroom to make room for three new looms. . . . **FOOD MACHINERY & CHEMICAL CORP., CHEMICAL DIV.**, New York, N. Y.–Has announced that A. T. Loeffler, vice president, is assuming functional responsibility for the marketing activities of the Chemical Div.

FOXBORO CO., Foxboro, Mass.–Has appointed R. L. Wroe an instructor in the company's training center. . . . **FRANKLIN RESEARCH CORP., WHEELER REFLECTOR CO. DIV.**, Boston, Mass.–Has assigned D. B. Rosequist as a representative in the Boston and North Shore areas. W. E. Hurry has been appointed a representative in the Maine, New Hampshire, and Vermont areas; and P. T. Smith will represent the company in southeastern Massachusetts and Rhode Island. The company has also announced the acquisition of Fullerton Mfg. Corp., Norwalk, Conn. . . . **GENERAL TIRE & RUBBER CO.**, Toledo, Ohio–Has appointed McGreevy Associates, Boston, Mass., as sales agents for the Textileather Div. The Bolta Products Div., Lawrence, Mass., has appointed J. J. Pollack product sales manager of saran monofilament yarns. . . . **GOODYEAR TIRE & RUBBER CO., CHEMICAL PRODUCTS DIV.**, Akron, Ohio–Has appointed M. J. De France director of the newly formed New Products Dept.

HERCULES POWDER CO., Wilmington, Del.–Has announced that it is considering the termination of cellulose-acetate manufacture at Parlin, N. J., by 1959. . . . **IMPERIAL PAPER & COLOR CORP. (CANADA) LTD.**, St. Johns, Que.–Has agreed to purchase the dry-color manufacturing facilities of Sherwin-Williams Co. of Canada Ltd. . . . **INTERCHEMICAL CORP.**, Hawthorne, N. J.–Has consolidated its Textile Colors Div. and R-B-H Dispersions Div. into a new

Color & Chemicals Div., with headquarters in Hawthorne. . . . **WALTER KIDDE & CO.**, Bloomfield, N. J.—Has established a new wholly owned subsidiary known as Kidde Textile Machinery Corp. . . . **MILPRINT, INC.**, Milwaukee, Wis.—Has appointed R. T. Dodge to the sales staff. He will represent the company in Maine and northern New Hampshire. . . . **MINNEAPOLIS-HONEYWELL REGULATOR CO.**, Minneapolis, Minn.—Has elected W. W. Finke a vice president.

MINNESOTA MINING & MFG. CO., St. Paul, Minn.—Has named R. Small and J. Boeing to the textile sales staff, with headquarters in New York City. . . . **NEWPORT INDUSTRIES CO., DIV. OF HEYDEN NEWPORT CHEMICAL CORP.**, New York, N. Y.—Has appointed E. G. De Laney Philadelphia district manager and C. A. Brier technical sales representative for northern New Jersey.

SIDNEY C. MOODY (left) has been named director general of Cyanamid International, a new division of American Cyanamid Co., New York, N. Y. HARRIS B. FENN, JR., (center) has been appointed manager of dyestuff sales for Allied Chemical & Dye Corp., National Aniline Div. New York, N. Y. ROY GOLZE (right) has been appointed district manager in the Philadelphia, Pa., area for Vickers, Inc., Detroit, Mich.

C. A. NORGREN CO., Englewood, N. J.—Has named E. H. Roos vice president in charge of engineering, production, and purchasing. . . . **PAISLEY PRODUCTS, INC., DIV. OF MORNINGSTAR, NICOL, INC.**, New York, N. Y.—Has announced a reorganization of Eastern Paisley sales management personnel to integrate the sales staff of the Federal Adhesives Corp., a recent acquisition. . . . **PITTSBURGH PLATE GLASS CO.**, Pittsburgh, Pa.—Has announced that it will build a multi-million-dollar plant manufacturing continuous fiber-glass yarn at Shelby, N. C. . . . **REICHHOLD CHEMICALS, INC.**, White Plains, N. Y.—Has bought land at Hampton, W. Va., on which to build a formaldehyde plant.

J. O. ROSS ENGINEERING CORP., New York, N. Y.—Has appointed J. F. Gschwind vice president of development and research. . . . **SANDOZ, INC.**, New York, N. Y.—Has acquired the stock of Fine Colors Co., Paterson, N. J. . . . **SCOTT TESTERS, INC.**, Providence, R. I.—Has appointed Scott Testers (Southern), Inc., representative for both sales engineering and equipment servicing for the entire Southeastern area. . . . **SHAWINIGAN RESINS CORP.**, Springfield, Mass.—Has appointed W. H. Bromley director of marketing. E. H. Finsilver has been named general sales manager. . . . **SHELL CHEMICAL CORP.**, Atlanta, Ga.—Has named J. W. Root technical salesman. His territory will be southern Georgia, Alabama, and all of Florida.

SUN CHEMICAL CORP., WARWICK CHEMICAL DIV., Long Island City, New York—Has promoted A. N. Henschel to technical-service manager for New England. E. N. Blackstead has been elected vice president of the company and general manager of its chemicals group. . . . **TEXIZE CHEMICALS, INC.**, Greenville, S. C.—Has named E. H. Kittredge, Jr., executive vice president. . . . **TURBO MACHINE CO.**, Lansdale, Pa.—Has appointed Parrott & Ballentine, Greenville, S. C., as its exclusive sales agents in the South. . . . **UNION CARBIDE CORP., UNION CARBIDE CHEMICALS CO. DIV.**, New York, N. Y.—Has named K. H. Rowland vice president in charge of production.

For Fast Collar Cutting!

UTICA
MULTIPLE KNIFE COLLARETTE CUTTER

For your collar cutting of tubular knitted fabrics you need a machine that is *fast, simple to operate, and thoroughly dependable* . . . you need the UTICA Bias Collarette Cutter. Here are the advantages of using a UTICA:

- RAPID—Cuts and rolls up one, two, three, or more strips at one time.
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NEW **The Automated MICRONAIRE**

- Speeds up checking two to three times.
- Provides a quick, easy, accurate and authorative measure of fiber fineness.
- Indicates the quality and value of the cotton.
- Indicates the dyeing properties.
- Measures the maturity of cotton.
- Predicts the spin-ability of cotton.
- Forecasts the appearance of the yarn and cloth by indicating the number of neps to be expected.

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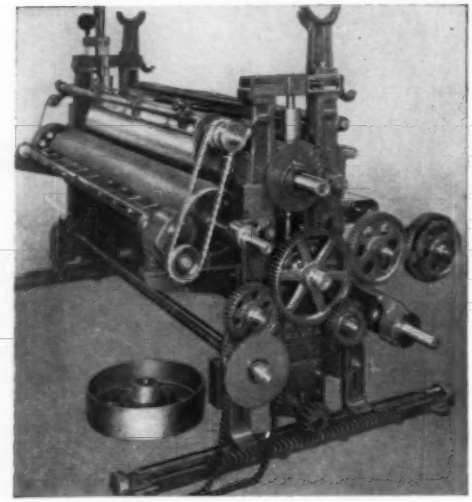

- Off-Set Roll Arrangement
- Doffing Device Attachment
- Hydraulic Pressure

Write us regarding our new type DOUBLE RUB TAPE CONDENSER for adaptation to woolen cards

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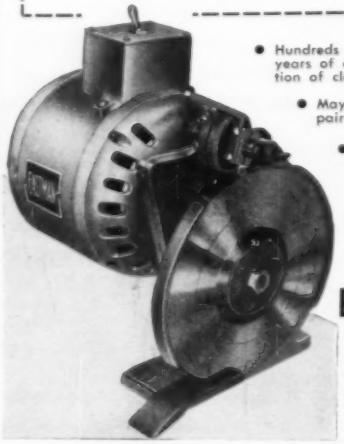

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- May be mounted singly, in pairs, or spaced as needed.
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DEMONSTRATIONS in YOUR PLANT gladly arranged. Write, wire, or call.

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NEWS ABOUT MEN

Richard Brown has become superintendent of Kennebec Mills, Fairfield, Me.

Edward Carman has joined Glenwood Mills, Easley, S. C., as card-room overseer. He had formerly been with Universal Winding Co.

John Cobb has joined Universal Fiber Treatment Co., Macon, Ga. He had formerly been card-room overseer with Glenwood Mills, Easley, S. C.

Dwight L. Copenhaver has been elected a director and executive vice president of Carol May Finishing Co., Inc., Concord, N. C. He had been plant manager of Chadbourn-Gotham Hosiery Co., Charlotte, N. C.

John Cornwell has been appointed superintendent at the Reeves Bros. plant at Chesnee, S. C. He had been superintendent at the company's Saxon Mill, Spartanburg, S. C.

Albro N. Dana has been elected assistant treasurer of Indian Head Mills, Inc., New York, N. Y.

Robert E. Davis has been appointed president of Kingston Knitting Mills, Inc., Kingston, N. Y.

W. Fred Davis has been elected president and treasurer of Palmetto Worsted Mills, Laurens, S. C. He succeeds the late Richard C. O'Brien.

KENNETH R. PEATTIE has been elected vice president in charge of procurement of American Felt Co., Glenville, Conn.

Fred H. Hammond, Jr., has been appointed assistant manager of Bemis Bro. Bag Co.'s cotton mill in Bemis, Tenn.

John L. Ketchum has become overseer of spinning, second shift, at The Adler Co., Cincinnati, Ohio.

A. F. Klinkhammer has been named general manager of Slingsby Mfg. Co. Ltd., Brantford, Ont.

William A. Levin has been elected president of Gold Mills, Inc., New York, N. Y.

R. A. Liner has been appointed general superintendent of Greenwood Mills' Mathews Plant, Greenwood, S. C. He had been superintendent of the company's Plants No. 1 and No. 2.

HOWARD HOLDERNESS (left) and JOHN VANNECK (right) have been elected members of the board of directors of Burlington Industries, Inc., New York, N. Y.

DWIGHT G. DAVIS, assistant vice president of Cone Mills Inc., New York, N. Y., has been appointed vice president.

E. B. SHAW has been elected executive vice president of The American Thread Co., New York, N. Y.

Francis S. Martin has been named assistant to the general superintendent at Firestone Textiles, Gastonia, N. C.

John Meon has been elected vice president of Avondale Mills, Birmingham, Ala. He is also vice president of Avondale Mills, Inc., New York, N. Y., the selling agent.

Donald C. Mohr has been named head of fabrication and styling for the Hockanum men's-wear worsted section, J. P. Steven & Co., Boston.

Clifford O. Morgan has been appointed superintendent of American Thread Co.'s Hawthorn Plant and Rug Unit, Clover, S. C. He had been industrial-relations manager for Clover Mills since March, 1956.

Whitney Stevens has been appointed assistant to J. P. Stevens, Jr., at J. P. Stevens & Co., Inc., New York, N. Y. He will assist in the sales and merchandising of woolen, worsted, and blended fabrics for men's and boys' wear.

Textile World

OBITUARY

Arthur Beardwood, 88, retired superintendent of U. S. Finishing Co., Olneyville, R. I.

Ephraim R. Bernstein, 52, vice president and general sales manager of Bernson Silk Mills, Buena Vista, Va.

William L. Dale, 45, superintendent of Dora Mill, Cherryville, N. C., and Clover Spinning Co., Clover, S. C.

Carl J. Dunbach, 56, vice president of Royal Mfg. Co., Charlotte, N. C.

Robert R. Hertzler, 49, assistant to the president of Forstmann Woolen Co., Passaic, N. J.

John Lesher, 89, founder of Bestok Underwear Co., Tower City, Pa.

C. W. Loomis, retired director and vice president of Bemis Bro. Bag Co., St. Louis, Mo.

Albert Matthews, 80, retired vice president of Martha Mills, Thomaston, Ga.

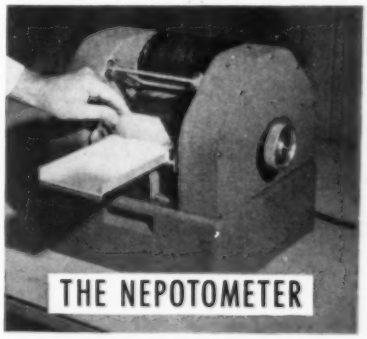
Michael R. O'Hagen, 53, sales executive for James Lees & Sons Co., Bridgeport, Pa.

William F. Spaulding, 52, assistant to the president of William Skinner & Sons, New York, N. Y.

J. Matt Spearman, 74, retired superintendent of the Airail plant of Alice Mfg. Co., Easley, S. C.

Benjamin Weintraub, 63, one of the founders of Apollo Knitting Mills, Inc., New York, N. Y.

New Instrument Measures Cotton's Nep Potential



A 25-grain sample is prepared by hand cards and placed on the feed plate of the Nepotometer. Total time required for test, including stripping, is about six minutes.

This high precision instrument simulates manufacturing steps. Simply run a sample, compare it with photo standards which come with the instrument, and you know in advance the nep potential. Saves time and money. Permits you to make the most profitable use of your cotton. Literature upon request.

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Specializing in Textiles Since 1914
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G. S. HAND TACHOMETERS and SPEED INDICATORS
for MAXIMUM PRODUCTION
IDEAL FOR MOTORS - SHAFTS - SPINDLES - LOOMS - TURBINES - FOR TEXTILE AND POWER PLANTS.
1% Accuracy for any range from 30 to 100,000 RPM or surface speed. Antimagnetic durable mechanism. Efficient repair service at moderate charges.
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How your truth dollars help keep the Reds in the red

• The truth dollars you give to Radio Free Europe help keep truth on the air behind the Iron Curtain.

And the truth is an enormously disruptive force to the Reds. For it keeps their captive people thinking . . . wondering . . . and less than completely dominated. The truth keeps needling the Reds. Breaks through their monopoly of lies. Keeps them unsure. Off balance. And thus the truth keeps up to forty fully armed Red divisions tied up policing Russia's satellite countries. Forty divisions, mind you, that might otherwise be put to more aggressive use elsewhere . . . and who knows where?

Your truth dollars keep the 29 super-powered transmitters of the Radio Free Europe network on the air . . . broadcasting the truth behind the Iron Curtain . . . every hour of every day.

Why *your* truth dollars?

Because Radio Free Europe is a private, non-profit organization supported by the voluntary contributions of American business and the American people. And *your* dollars are urgently needed to keep it on the air . . . to help operate its transmitters, pay for its equipment and supplies, and its scores of announcers and news analysts in 5 languages.

Help keep the Reds in the red. Send your truth dollars to Crusade for Freedom, care of your local postmaster.

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EXECUTIVE POSITION OPEN
YARN MILL MANAGER WANTED
To Supervise Complete Operation of Mexican Mill

Must be a graduate mechanical engineer or textile specialist with mechanical aptitude. Must be proficient in Spanish language. Must have experience in managing yarn mill. Please submit qualifications plus photo to

P-7136, Textile World
Class. Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

OVERSEER OF COTTON CARDING
WANTED FOR A SALE YARN MILL IN SOUTHERN ONTARIO CANADA

Thorough Knowledge of all Processes with Experience in Processing Combed, Blends, as well as Carded.
In Application State Age, Education, Experience and Salary Required.

P-6942, Textile World
Class. Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

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CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

POSITIONS VACANT

Position available for man with experience and ability to operate underwear manufacturing plant. Must have mechanical sewing machine background as well as production and personnel experience. P-6767, Textile World.

Assistant Superintendent — With practical and theoretical knowledge of the manufacture of medium and heavy weight cotton fabrics in southern state. Good future opportunity. Send detailed application with photo (which will not be returned) to P-6969, Textile World.

POSITIONS WANTED

Overseer of Weaving available. Ten years experience as overseer of weaving. ICS graduate. Weaving, slashing, warping on all types of fabrics. Good loom fixer on all types draper, looms and darbyheads. Some knowledge of designing, would take overseas job. PW-6838, Textile World.

Top-Sales Man Textile Engineer, twenty years manufacturing and business experience, in textile wish to locate New York City position. Language: English, German, Italian, French. Highest references. PW-7130, Textile World.

Textile Engineer. 6 yrs. exp. Product. Process Div., Mfg. Supervision, Bulk yarns, Time, Motion—College grad. B. Sc. 34, Married. Currently employed—Avail. 30 days. PW-7120, Textile World.

Supt. Weaving, thoroughly experienced all types draper and C & K Looms—all phases preparatory—best of references—will accept domestic or foreign service—no incumbency. PW-7075, Textile World.

N. C. State College graduate. 30 years experience in Carding, Spinning, Dyeing, Weaving and Finishing cotton and synthetic goods, includes experience on fancy goods. Excellent references. PW-7016, Textile World.

Textile Graduate with practical and technical mill experience as Supt, Mgr, and Sales Manager, all fibres, broad and narrow, elastic or firm, desires challenging position, fabric development, analysis, and costing. PW-6975, Textile World.

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ENGINEERING and CONSTRUCTION DIVISION

Synthetic Fibres Engineer

Senior position available for graduate engineer with minimum 10 years experience in synthetic fibre processes. Must have demonstrated ability to direct over-all design of complex spinning and handling equipment.

Excellent opportunity for growth in a new and challenging field of interest of this diversified chemical company.

Liberal employee benefits
Central New York City location

Please submit resume giving full particulars as to age, education, experience and salary desired. Replies will be held in strict confidence.

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30 Rockefeller Plaza New York 20, N. Y.

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A Leader in the Manufacture of Paper Makers Felts wants a man CAPABLE OF SETTING UP METHODS and EQUIPMENT for MEASURING the QUALITIES of its TEXTILE PRODUCTS

SEND FULL RESUME

Education
Experience
Family Status
and Age

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P-7085, Textile World
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REQUIREMENTS:

Textile Engineering Degree
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COMPENSATIONS: Good Salary Finest of Health, Vacation & Retirement Plans, Profit Sharing Retirement Trust Plan.

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WOOLEN – WORSTED – SYNTHETIC

Location:—Clinton Woolen Mfg. Co., Clinton, Mich.

PICKING & RAW STOCK

1—P&S 88" x 4-section Raw Stock Dryer, all M.D.
2—Smith 48" x 6-bar BB Mixing Pickers w/extended hopper feeds, emulsion systems, and M.D.'s.
2—Sargent Electric Bagging Machines.
1—Harwood 44" Pit Feed, M.D.
1—Cone Duster, 6', w/dust fan and M.D.

CARDING

4—Sets D&F 48" x 60" dia. 3-Cyl Woolen Cards w/feeds, 20" garnet breasts, Peraltas, broad band inter. feeds, and D&F double rub tape condensers.
1—Set Uxbridge Vacuum Exhausted Fancy Hoods (on one above card) w/blower and M.D.
2—Peraltas, 48", hydraulic loading.

SPINNING

1—Whitin 120-spdl x 6" ga x 4½" Ring Mdl E Woolen Spg Frame
6—Whitin 144-spdl x 6" ga x 4½" Ring Mdl E Woolen Spg Frames w/Pneumafils.
Lot—Mdl E Woolen Spg. Bobbins
1—H&W Yarn Conditioner, Type ST-2.

WINDING, DRESSING & WARP TYING

2—Whitin 39-Spdl Schweiter Winders with Auto Loaders.
3—Whitin Sgl Spdl Schweiter Rewinders.
1—Abbott 142-Spdl Mdl 65 Wood Cone Winder.
3—D&F 48-end x 40" Hi Speed Mdl 44 Jackspoolers, Photo Electric Stop Motion, Magazine Creels, & M.D.
2—D&F 111" Pinless Dressing Reels w/D&F Beamers and D&F Warp Compressors.
1—New Sjostrom Variable Speed Dressing Reel Drive, 220-440 V.
1—Barber-Coleman Mdl LS Warp Tying-in Machine w/stat. frame
1—Terrell Mdl K Bobbin Stripper w/empty bobbin conveyor M.D.

WEAVING

4—CK 92" W-3 4 x 2 Select-a-Pick Convertible Woolen Looms.
4—C&K 92" W-3 4 x 1 Convertible Woolen Looms.
28—C&K 92" W-3 Auto 4 x 1 Non Convertible Woolen Looms.
1—Cleveland Tramrail Weave Room Tracking Systems.

INSPECTING, TACKING & BURLING

1—Back Lighted Weave Room Inspection Perch, 88", w/roll up head and M.D.
1—92" Power Burling Perch, roll to truck.
1—84" Power Despecking & Burling Table.
1—100" Dbl Back Lighted Power Burling Table.
1—Uxbridge Auto Tacking Range w/Doubler, Tacking Head, M.D.
1—Doubling & Tacking Range w/Merrow Mdl A-1-4E Tacking Hd.

DYEING

1—Scribner 500# S.S. Pressure Raw Stock Dye Kettle arranged for Hi Temp operation. Incl. Bristol Cycling Controller, M.D.
1—Venango 100# S.S. Hi Temp Raw Stock Dye Kettle w/controls & M.D. New Dec. 1955.
1—Open S.S. Raw Stock Dye Kettle, app. 25# cap.
1—Hunt 45" S.S. Piece Dye Kettle, M.D.
1—R&L 8' Totally Enclosed S.S. Piece Dye Kettle arranged for Hi Temp Dyeing. Inc. Bristol Cycling Controller and M.D. Yr. 1955.
1—Hunt 12' Totally Enclosed S.S. Piece Dye Kettle w/Taylor Cycling Controller and M.D.
1—Smith Drum 1 lb. S.S. Sample Raw Stock Pressure Dyeing Machine w/M.D.
1—Macbeth Color Identification Lamp Mdl BX 848 w/Booth & Foot Control.
1—Traveling Crane Type Dyehouse Tracking System w/hoists.

WET FINISHING

1—Hunt Sample Express Fulling Mill, M.D.
1—Hunter #20 Fulling Mill w/Rubber Rolls and M.D.
2—Hunter #26B Fulling Mills w/Rubber Rolls, pneumatic loading and M.D.
2—Hunter 115" Rubber Roll Cloth Washers, M.D.
1—R&L 8' Rubber Roll Cloth Washer, M.D.
1—R&L Soaping System Inc. pump and M.D.
1—American 48" Centrifugal Extractor, SS basket, M.D.
1—Hunter 72" BB Ceiling Scutcher, sgl beater, M.D.
1—Hunter 72" Carbonizing Range w/Wet out tank, Lead lined acid tank, Leeds & Northrup Micromax Acid Controller, 2-sets 72" x 18" Rubber Squeeze Rolls pneumatic loading, 5-section loop dryer, controls, and M.D.'s.
1—Hunter #20 Dry Mill, M. D.
1—P&W 66½" x 2-Cyl Wet Brush, M.D.
1—Hunter Rope Soaper, M.D.
1—Gessner 72" Wet Decater w/Tenter and Winding Frame, 1-SS tank, 1-CI tank, controls, and M.D.'s.
1—Set Hunter 72" x 18" dia. Rubber Cloth Squeeze Rolls w/swing folder and M.D.
1—Spare set 72" x 18" Rubber Rolls for Hunter Squeeze Set.
1—Kenyon 38—75" x 8-Pass 3-section Pin Tenter Cloth Dryer w/controls, fans, and M.D.'s.

DRY FINISHING

1—Gessner 74" x 18-roll D.A. Napper w/Torque Indicators, Reeves Energies and M.D.
1—Gessner 74" x 18-roll S.A. Napper w/Swing folder, Reeves Energy, and M.D.
1—P&W 66½" Sgl Blade Gap Rest Cropping Shear, M.D.
1—Tandem Teasle Gig Range w/2-P&W 66½" x 2-Cyl Teasle Gigs and M.D.'s.
1—Tandem Gig and Brush Range w/1-P&W 66½" x 2-Cyl Brush, 1-P&W 66½" x 2-Cyl Teasle Gig, and M.D.'s.
1—P&W 66½" x 2-Blade Mdl A Shear, M.D.
1—P&W 66½" x 3-Blade Davidson Shear w/turning device, Conway Clutches, dbl side flox hoods, swing folder, M.D.'s.
1—Flox removal System w/60" fan and M.D.
2—Ceiling Folders, 80" & 70", M.D.'s.
1—Gessner 66½" x 2-Cyl Spot Proofer, M.D.
1—Gessner 72" Full Decater w/air guiders, comb. winding & unwinding stand, cooling stand, seamless boiler, auto controls, Nash Hytor Vacuum Pump and M.D.'s.
1—Gessner 84" x 20" dia. Mdl PD Hi Speed Rotary Cloth Press, Reeves #5 Drive, M.D.
1—Gessner 72" Hydrolizer w/pump, power scray, and M.D.
1—Gessner 66½" Brush, 2-cyls., M.D.
1—Gessner 66½" Power Scray.
1—Voelker 66½" x 16' dia. Rotary Cloth Press, M.D.
3—Macbeth 48" x 24" Examolites.
1—Power Inspection Perch, 74", M.D.
1—P&W 66½" Doubling & Winding Machine, M.D.
4—Sets Guider Specialty Air Guiders.

MISCELLANEOUS

1—IBM Electric Time System w/1—Central Clock & Control type 91-4, 1—Time Clock, Mdl 8700 and 12—Time Card Racks. Yr. 55.
Other Misc. items such as Stock blowers; blower pipe; Amco humidification systems; trucks—stock, box, platform, pallet, etc; air compressors; electric hoists; Alemite elec. grease guns; Ionotron Bars; sewing machines—rotary, Merrow, Singer; SS pails, scoops, tanks; Laboratory equipment—scales, Moisture Meters, Hunt Whirlwind Sample Dryer, etc; pallet dollies; 8¾" auto loom bobbins; spools; parts; and supplies.

Location:—Hot Springs, N. C.

1—P&S SYNTHETIC BLENDING LINE w/4-P&S AUTO WEIGHING HOPPER FEEDS MDL 655 and 1-P&S 36" BLENDING CONVEYOR, skewing sections. Yr. 1952. All M.D.

1—Kitson 36" Buckley Beater Machine w/magnet and M.D.
1—Sturtevant #6 Stock Blower, M.D.

3—P&S 2-CYL 30" DIA. ALL METALLIC SYNTHETIC CARDS w/Mdl 657 CARD FEEDS; 60" wide BREAKERS and 26" dia Garnet Breasts; long angle BROADBAND INTERMEDIATE FEEDS; 84" WIDE FINISHERS; 4-Coiler Fronts w/4-P&S 20" DIA x 36" CAN COILERS; and variable speed drives throughout including D.C. Ranges Drives and Motors.

1—S-L Lap Winder, Mdl 37, M.D.
1—Foster 100 Spdl Mdl 102 Wood Tube Winder, 7" traverse, M.D.
1—Universal 48-Spdl Mdl 50 Paper Tube Winder, M.D.
1—Foster 40-Spdl Mdl 101 Paper Tube Winder, M.D.
1—P&S 36" DBL DRUM CEILING CONDENSER.

Location:—Alexander Wool Combing Co., Lowell, Mass.

1—Sargent 72" Automatic Box Duster Hopper Feed, M.D. 1950.
1—SACM Fleece & Cott Opener, M.D. 1951.
2—Sargent Electric Baggers, 1953.
1—Sargent 48" x 5 Bowl Scouring Train, 5th Bowl S.S. 1955. Taylor Controls.
1—Dings 18" High Intensity Magnet.
1—Economy Baler Style 60F, M.D.
2—D&F Sgl Cyl 60 x 60 Wstd Cards.
6—D&F Dbl Cyl. 48 x 54 dia Wstd Cards, Breast Type.
4—J.S. Noble Combs, 1948.
9—PS&S Noble Combs, 1948.
10—Sets New Circles 45/49.
1—Sargent Electric Top Press, 1949.
12—SACM Mdl SAG French Combs, 1947-50.
1—Sargent 2 Bowl 44" Backwasher Unit—1947.
7—Intersecting Gills.
1—Sargent 48" Mix Picker.
11—Cards Sgl Cyl, M.D.
1—Sargent 48" Nub Rolling Mch. 1954.
1—Sargent 50" x 2 Sect. Raw Stock Dryer w/Control.
1—Sargent Top Press, 1951.
1—Complete Sharples Unit w/G2./

Miscellaneous & Stock

1—S&F 60" x 30" dia Regular Shredder
2—Holdsworth Sgl Head Dbl Baller Gill Reducers, yr. 1952 & 1956, M.D.
3—D&F 3-Cyl 60 x 60 Woolen Cards w/Peraltas and Whitin S.A. Tapes.
1—D&F 3-Cyl 60 x 60 T-Slot Woolen Card, ring doffers.
2—D&F and P&S 2-Cyl 60 x 60 Woolen Cards, Ring Doffers.
6—Duesberg-Bosson 72" Peraltas.
2—D&F 144-Spdl x 6½" Ga x 5" Ring Mdl F Woolen Spg Frames w/Pneumafils, Yr. 1957.
1—FOSTER 50-Spdl Mdl 102C Paper Cone & Tube Winder. Yr. 1955.
7—SCHARER 10-Spdl Auto Quillers. Yr. 1949-1951.
1—WCM 504—Live End Magazine Creel for Cones or Mdl E Bobbins.
100—C&K 76" W-3 Auto 4 x 1 Woolen Looms.
1—HERCULES 60" Centrifugal Hydro Extractor, SS Basket, M.D.
1—Set R&L 84" x 18" Rubber Pneumatic Cloth Squeeze Rolls.

AVAILABLE FOR INSPECTION AND IMMEDIATE DELIVERY *Address all inquiries to*

FRANK G. W. McKITTRICK CO. *TEXTILE MACHINERY DEALERS*

78 Fletcher Street . GLenview . 8-6391 . Lowell, Mass.

PRIVATE LIQUIDATIONS BY

FRANK G. W. McKITTRICK CO and GEORGE D. FLYNN JR.

WOOLEN – WORSTED – TRICOT

Location:—Seymour Woolen Mills, Seymour, Ind.

SCOURING, PICKING & RAW STOCK

1—Hunter 48" x 3-bowl Scouring Range w/feed, 2-Cyl Wool Opener, and M.D.'s.
1—D&F 24" Auto Box Duster. 1—D&F 7' Cone Duster, M.D.
1—D&F 48" Burr Picker w/feed and M.D.
1—D&F 60" Burr Picker w/feed and M.D.
1—Set Hunter 38" Raw Stock Squeeze Rolls w/pneumatic loading, 36" pit feed, and M.D.
1—Smith 48" x 8-bar Mixing Picker, M.D.
1—D&F 48" x 12-bar Mixing Picker, BB, w/feed, oiling system, and M.D.
1—Clark 48" x 6-bar Mixing Picker, BB, w/feed and M.D.
1—D&F 48" x 6-bar Mixing Picker, BB, w/feed, oiling system, and M.D.

DYEING

2—R&L 500# SS Raw Stock Pressure Dye Kettles, M.D.'s.
1—Hunter 4' Mdl M, SS Piece Dye Kettle, M.D.
1—R&L 34" Totally Enclosed SS Piece Dye Kettle, M.D.
1—R&L 8' Totally Enclosed SS Piece Dye Kettle, M.D.
1—R&L 9' Totally Enclosed SS Piece Dye Kettle, M.D.

SPINNING

6—Whitin 120 Spdl x 6½" ga. x 5" Ring Mdl E Woolen Spg Frames, Yr. 1947-1950.
Lot—Mdl E Woolen Spg Bobbins
6—J&B 312-Spdl x 2" ga. Woolen Mules
2—J&B 364-Spdl x 1¾" ga. Woolen Mules.

WINDING, SPOOLING & DRESSING

18—Spdls Whitin Schweiter Winder, yr. 1946-1950, M.D.
2—WCM Co. 42½" x 40-end Jackspoolers w/Magazine Creels, Elec. stop motions and M.D.'s.
2—D&F 92" Pin Type Dressing Reels w/WCM Reamers and WCM Warp Compressors.

WEAVING

12—C&K 108" W-3 Auto 4 x 1 Woolen Looms, Multipliers
4—Ditto but 106" 4—C&K 92" W-2 Auto 4 x 1 Looms
4—Ditto but 100" 8—C&K 92" Veribest 4 x 1 Woolen Looms

WET FINISHING

1—Hunter 48" Rubber Roll Cloth Washer
1—Hunter 6' Rubber Roll Cloth Washer
1—R&L 10' Rubber Roll Cloth Washer, M.D.
2—R&L Mdl 65 Fulling Mills, Wood Rolls, M.D.'s.
1—R&L 90" Carbonizing Range w/Lead lined acid tank, 90" x 18" dia. Rubber Squeeze Rolls, Hunter 90" x 6-section Dryer, controls and M.D.'s.
1—R&L Steel 4-section Dry Mill, M.D.
1—Birch 90" Dbl Beater Scutcher w/Vacuum Extractor and pump, swing folder, and M.D.
1—Hunter 50—96" x 8-Pass Pin Tenter Cloth Dryer. M.D.'s.

CARDING

4—Sets D&F 3-Cyl 48" x 60" dia. Woolen Cards w/feeds, 15" & 20" dia. garnet breasts, Perkins Fibre Conditioners, broad band intermediate feeds, Whitin 80-end double rub, waste end blowers, and M.D.'s.
4—Sets ditto but Soutex and D&F sgl rub 96 and 104-end tape condensers.
1—N.E. Portable Vacuum Stripper System, Mdl PVI, M.D.
2—48" Floor Grinding Stands. 1—60" Floor Grinding Stand.
4—B. S. Roy 48" Card Traverse Grinders.

DRY FINISHING

1—Woonsocket 90" x 20-roll S.A. Napper w/swing folder M.D.
1—D&F 90" x 14-roll S.A. Napper, swing folder.
2—D&F 90" x 24-roll D.A. Nappers, swing folders.
1—Gessner 90"x15" dia. Rotary Cloth Press w/swing folder, M.D.
1—Gessner 67"x15" dia. Rotary Cloth Press w/swing folder, M.D.
1—P&W 72"x36" Semi Decater w/air guiders, N.H. L-5 Pump, M.D.
1—P&W 76" Doubling, Measuring, & Winding Machine.
1—C&M 78" Open Width Rolling & Measuring Machine. M.D.
1—B. S. Roy 100" Napper Roll Grinder.

MISCELLANEOUS

Sewing machines—mill, Merrow, and blanket; stackers; Toledo scales; belt lacers; air compressors; tanks; machine shop—lathes, drills, milling machine, saw, vises, grinders, weller, etc; office equipment—addressograph, duplicator, RR Bookkeeping Machine, typewriters, calculators, adding machines, files, desks, chairs, water coolers, etc.

Location:—Abbot Worsted Co., Seneca, S. C.

Also Includes Bradford Spg. Unit — Repair Shops, etc.

TURBO TOP UNIT 1956-7

4—Turbo Staplers Mdl S.
2—Turbo Fiber Setters or Auto Claves. Mdl CS & FS.
4—Gill Type Fiber Breakers.
4—Holdsworth Baller Gill Reducers.

AMERICAN SPG. UNIT

3—Holdsworth Gill Reducers w/Roper Auto Levelers. 1955-6.
8—W&S Pin Drafters Duals & Quads.
12—S-L 10x5 Mdl F5 Rovers 48, 72 & 96 spdl. 1953.
24—S-L Mdl SS4 Spg 200 x 4 x 2¾ Herr Ring (Pneumafil 1957) 1953-4.
1—S-L Mdl SS4 Spg 48 x 4 x 3" Herr Ring. 1951.
1—H-W Yarn Conditioner. 1951.
3—Uni 100 spdl Mdl 44 Roto Coners. Steel Rolls. Paper Cones. 1953.
14—Fidelity Sql Side Skein Reels. M.D.
1—Armstrong Skein Press. M.D.
1500—Fiber Roving Cans 15 x 36.
Complete with Bobbins-Trucks-Parts, etc.

MISC.

1—Whitin Mdl R Twister 200 x 5½ x 4½" Ring x 11" Tr. 1956.
2—Uni Mdl 44 Roto Coners. 60 spdl. Steel Rolls. Microset Slubcatchers. 1951-3.
2—Foster Mdl 102 x 100 spdl Paper Cone & Tube Winders 6" Tr.
1—Economy Mdl 46R Waste Baler. 1953.
3—Toledo 1000 x 1# Dial Floor Scales. 60 x 48 & 72 x 60.

LABORATORY

2—Uster Testers Mdls B8 & B12.
1—BL Microscope Unit complete for Micron Testing.
1—Suter Staple Analyzer.
2—Baird 4-Sample Moisture Testers.
1—Strobotac.
1—Crookmeter AATCC.
1—Scott Yarn Tester Mdl DH.

Location:—E. R. Meinig Co., Reading, Penna.

3—REINER 84" x 2-BAR 32 GA. SIMPLEX MACHINES, hydraulic beam control, 21" brackets, M.D.'s.
7—HOFFMAN 84" x 2-BAR 32 GA MDL C SIMPLEX MACHINES, hydraulic beam control, 21" brackets, M.D.'s.
4—HOFFMAN 84" x 2-BAR 30 GA SIMPLEX MACHINES, hydraulic beam control, M.D.'s.
1—REINER 30" WARPER, MDL SW-24, Reliance U-S Drive
2—TOTALLY ENCLOSED 12" S.S. DYE BECKS, M.D.'s.
1—DITTO 24" 1—DITTO 35" 1—DITTO 46" 1—DITTO 118".
1—PIN TENTER DRYER 36—72" x 10-Pass w/motor driven selvedge straightener, 72" hydraulic quetch, McCREARY 80" POWER OPENER and M.D. throughout.
1—CURTIN-HEBERT 60" SUEDER, blowers, and M.D.
1—VACUUM EXTRACTOR 72" w/Nash Hytor L-5 pump and M.D.
1—WATERWAY COMB. WASHER AND EXTRACTOR, 28" dia. S.S. basket, w/pump and M.D.'s.
1—FLETCHER 60" WHIRLWIND EXTRACTOR, type WW, w/S.S. basket and M.D.
1—STRAIGHTAWAY PIN TENTER FRAME 36"—120" x 75' L. w/P&S Housing 43½' L. fans, controls, and M.D.'s.
1—ADDRESSOGRAPH Mdl 1950P.

Location:—Mass. Mohair Plush Co., Lowell, Mass.

GILLING & CONVERTING

2—Holdsworth Gill Reducers. Dual Can.
20—Intersecting Gills 3/8 & 7/16" p. Sql Can, Dble Can, 2-spdl, & Ballers, M.D.
1—Pacific Converter M2800 Lot 10 Complete.

BRADFORD DRAWING

20—PS&S 6 x 12⅜" p. 10 x 12⅜ 14 x 9¼. Some M.D. 1939-46.
8—PS&S 24 x 7¼" p. 9¾ x 5 Flyer Reducers.
4—Whitin 40 x 6½" p. 8 x 4½ Ring Rovers. M.D. 1941.
1—Whitin 8 spdl x 7¼" p. 8 x 5 Sample Ring Reducer. M.D.
1—Whitin 12 x 6" p. 8 x 4 Sample Ring Rover M.D.

SPG & TWISTING—REELING—WINDING

23—H&S 180 x 3¾ x 2¾ Herr Ring Spg. M.D.
12—PS 208 x 3½ x 2¾ Herr Ring Spg. M.D.
35—S-L Twisters 4" ga x 3" Ring x 9" Tr. M.D. 1½" dia front roll.
1—S-L Twister 120 x 6" ga x 4½" Ring. M.D. 1939.
6—Fidelity Sql Side Skein Reels.
4—Foster 80 spdl x 7" Tr. Mdl 102 Tube Winders.

MISC.

Everything normally found in a Bradford Spg. Plant.

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TEXTILE MACHINERY DEALERS

TEXTILE MACHINERY FOR SALE AT LIQUIDATION SALES

United Piece Dye Works, Lodi, N. J. plant only

40—Stainless Steel Enclosed Dye Boxes, 6 x 12′ wide
6—V. V. Duplex Stainless Dye Boxes, 12x8′
1—V. V. Super Finishing Range, 120′ x 66″—1949
1—V. V. Finishing Range, 100′ x 64″—1951
1—V. V. Finishing Range, 90′ x 62″—1946
1—Textile Open Washer, 60″, 4 pneu. squeezes
3—R. B. & F. Print Machines; 3 color—64″, 8 color—64″, 12 color—52″, complete w/backrigging
4—Mulhouse Print Machines; 10 color—63″, 3—12 color—63″

St. Croix Mill, Milltown, New Brunswick

3—Aldrich Single Process Pickers, 40″, 2 beaters—1950
3—Whitin Roller Cards, 40″ wide—1948
20—Whitin 12 Draw. Frames, 4 del.—1947
9—Whitin G8, 8 x 4 Roving Frames, 138 spdl.—1947
2—Whitin G10, 10 x 5 Roving Frames, 120 spdl.—1953
20—Whitin F2 Spinning, 4″ ga. Long Draft, 240 spdl.—1947
43—Whitin F Spinning, 3-¼″, 3-½″ ga. 240, 288 spdl.
3—Abbott Cone Winders #65, 2—135 spdl. 1—130 spdl.—1954
4—Abbott Quill Winders, 100 spdl. pin board—1953
68—C. & K. Model C4 Looms, 78″ swords, 4 x 1,—1949
1—Dalglish 100′ x 72″ Finishing Range, complete—1949

Grandmere, Quebec—Surplus Woolen Machinery

42—C. & K. Model W3 Woolen Looms, 82″, 1946-49
30 spdls.—Whitin Schweiter Quillers, MS—1944
1—Nat'l Loop Dryer, model RHG, 40′ x 92″ stick—1951
2—Hunter Pneumatic Padders, 80″, 12 ton—1951
6—Stainless Enclosed Dye Boxes, 4 x 12′, 1947-51
1—Arlington Scutcher 80″, Vacuum Extractor L4, Detwister
1—Windle Cloth Doubler 82″ wide—1951
1—P. & W. Cloth Doubler, 66″ wide-1954

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TEXTILE EQUIPMENT COMPANY
40 Worth Street, New York 13, N. Y. • COrtlandt 7-1591
• APPRAISALS • PURCHASE AND SALE TEXTILE MACHINERY • LIQUIDATION OF MILL PROPERTIES •

EXCELLENT USED MACHINERY FOR SALE

1—Benoit System Weighing Hopper and Toledo Scale—Year 1950
1—Proctor & Schwartz 48″—8 Bar Super Picker—Ball Bearing
1—Proctor & Schwartz 48″ Stock Feeder with extended apron
1—Proctor & Schwartz 12 Bar, 36″ Shredding Mixing Picker
1—Proctor & Schwartz 36″ Single Drum Ceiling Condensor
1—Proctor & Schwartz 36″ Double Drum Ceiling Condensor
1—Set James Hunter Squeeze Rolls 72″ x 18″, with Folder & Drive
1—Parks & Woolson 4 Cylinder Steam Brush—68½″
1—David Gessner Semi-Decatur 72″ x 36″, with pump and Gear Motors
1—Parks & Woolson Ceiling type power perch with Vari-Drive
1—Pacific Evenness Tester—Year 1954
2—Twist Testers
1—Davis & Furber Solid Bar 92″ Pinless Dressing Reel
2—New Entwistle Hackstands with Electric Stop Motions
4—Warp Compressing Co. 40″—40 End Spoolers with Creels
1—Foster Winder 100 Spindle for Wood Tubes Model 102
1—Foster Winder Model 102—80 Spindle for Wood cones
1—Foster Winder Model 12—8 Spindles for Wood Tubes, 8 Cones
1—Abbott 50 Spindle Filling Winder, with selectors—1954
12—C&K 82″—W3 Woolen Looms, Convertible with all convertible parts—Now running 9½″ Bobbin. Excellent Condition, Friction let-off, EWSM, driven by 1½ HP motors. In place as operated.
12—C&K 82″—W3 Woolen Looms Not convertible, as above
2—Loom Fixers Benches with vices

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LIQUIDATING PARAMOUNT FIN. CO. at 200 Front Street, Pawtucket, R. I.

SELLING AT PRICES THAT ARE RIGHT

4—50″ "Tommy Dot" Butterworth Latest Type Backfillers.
1—10 Box 50″ Cont. Dyeing Machine or Open Soaper with 48-50″—35-pound Pressure Morrison S. S. Cans.
1—Perkins 100-ton—50″ Hydraulic Schreiner Calender
1—12-Color 50″ Printing Machine; 2-8 and 2-6 Color 44″ Wide Printing Machines.
1—24′ x 50″ face "HAVET" Acid Ager.

Complete Weisner & Rapp Continuous Bleach "Becco" Unit, 3000 lbs. per hr.

Measuregraph D & R and Tuber Combinations. Calenders.
Motors, Trucks and 100,000 Other Items. Large Selection of Copper Printing Rolls.

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PROVIDENCE, R. I.

WANTED
Smith Drum Stainless Steel PACKAGE DYEING MACHINE 200 to 300 lb. capacity.

W-6863, TEXTILE WORLD
Class. Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

WANTED MACHINERY

Late 60′ Models Only. Must be Hunter Imperials or Proctor 700's. Double Cylinder, Double Doffer 20″-30″.

W-7053, Textile World
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An Indian Firm desires to make collaboration with textile mill flyers manufacturer for manufacturing flyers in India. Interested manufacturers please write to: Industrial Mechanical Works, Ramkrishna Colony, Maninagar, Ahmedabad (India).

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This service is aimed at helping you, the reader of "SEARCHLIGHT", to locate used Textile equipment not currently advertised. (This service is for USER-BUYERS only). No charge or obligation.

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Your requirements will be brought promptly to the attention of the equipment dealers advertising in this section. You will receive replies directly from them.

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Street .....
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LATE TYPE TEXTILE MACHINERY

44—U. S. TEXTILE FACE DRIVE TWISTERS • • 1951–1954

160 OR 184 SPINDLES EACH . . 8" GAUGE . . HEADLESS . . LIKE NEW CONDITION

9—U. S. TEXTILE REDRAWS 1950-51 • • SPINDLELESS • • 220 v.-60 cy. • • 60 SPINDLES EACH • • COMPLETE

12—SIPP-EASTWOOD REDRAWS 1951 • • SPINDLELESS • • 60 SPINDLES EACH

2—ATWOOD #200 REDRAWS 1954 • • 68 SPINDLES EACH 11½" SPACING • • S. S. TROUGH

7—YARN CONDITIONERS H & W ALL ELECTRIC • • 1948-52 • • COMPLETE

2—1956 AUTOCLAVES S. S. COMPLETE WITH ALL CONTROLS

400—UNIVERSAL #50 CONERS ALL COMPLETE WITH TROUGHS ROLLS & ACCESSORIES • • ALL TYPES

3—ABBOTT QUILL WINDERS • • 116 SPINDLES EA. • • MODEL #65

1951 MODELS • • AUTOMATIC TRUCK LIFT • • COMPLETE • • PERFECT CONDITION

12—FLUFFLON MACHINES • • MODEL 100 INSTALLED 1955 • • 272 SPINDLES PER MACHINE 22 OZ. PACKAGE • • COMPLETE WITH BOBBINS LIKE NEW CONDITION

2—LACING MACHINES • • COMPLETE 5 PT. and 7 PT. CONVERTED READER CURTAIN

2—MODEL 550 SUPERLOFT MACHINES 1956 • • 216 SPINDLES • • LARGE PKG. • • COMPLETE

WEAVING EQUIPMENT

20—C-4 LOOMS • 4 x 1 • 72" • 25 HARNESS DOBY

2—REINER 21"x21" WARPERS • • 1952

2—REINER 72" DIRECT WARPERS • • 1948

1—REINER 42" DIRECT WARPER • • 1952

1—COCKER 54¼" WARPER • • 30" BEAM

1—SIPP EASTWOOD 101" HORIZONTAL WARPER

2—SIPP EASTWOOD MAG., CONE CREELS • • 800 & 1000

6—REINER 540 END MAG., CONE, PIRN CREELS

1—2 BLADE SHEARING MACHINE

1—BARBER COLEMAN WARP TIE-IN LS MODEL SHUTTLES • • S.S. REEDS • • OTHER ACCESSORIES

HOSIERY DYE AND FINISHING

7—D-36 PREBOARDING MACHINES

3—M-31 PARAMOUNT MACHINES

8—F-47 POST BOARDERS

2—200 LB. SMITH DRUM ROTARYS • • RD12 6 POCKET • • MONEL • • REBUILT BY S.D. 1957

6—PADDLE DYE MACHINES 100-75-50 LBS.

24—FORMICA PAIRING TABLES

200—PAIRING TRUCKS

2—SAMPLE FULL FASHIONED KNITTERS SINGLE SPACE • • WILDMAN • • 54 & 45 GAUGE

1–Foster Model 102 Winder • • 1953 Model

60 SPINDLES • • S.S. • • ROLLS 7" TRAVERSE • • COMPLETE • • EXCEPTIONAL CONDITION

DYE HOUSE

3—JAMES HUNTER DYE BECKS • S.S. CLOSED 2', 5', 10'

3—RIGGS & LUMBARD BECKS • • S.S. OPEN • • 3', 4', 6'

1—RODNEY HUNT S.S. 8' OPEN DYE BECK

2—HUSSONG SKEIN DYERS 1950 • 600 LB. S.S.

1—BUTTERWORTH 8 CAN STACK UNIT • • S.S. • • 23x60

3—DYE JIGS V.V. STAINLESS • 72" • • TENSIONLESS

1—WERNER PNEUMATIC PADDER • S.S. • 5 TON • 60"

2—V.V. TUBING MACHINES 1950 MODELS

1—BOIL-OFF MACHINE • • SAMPLE • • BIRCH BROS.

NARROW FABRICS

2—RAMSEY HYDRAULIC WARPERS 2 AND 4 BEAM

1—10 CAN FINISHING MACHINE 23x30 STAINLESS • • COMPLETE • • 1950

1—11 CAN FINISHING MACHINE 23x30

2—RUFF EDGE EMBOSSING MACHINES

2—RUFF SLITTING MACHINES • • 12-36 ENDS SPOOL TAKE-UP • • 8 INCH • • CELLOPHANE

LOOMS BUILT TO SPECIFICATIONS AND GUARANTEED

14—MODEL 100 ATWOOD TWISTERS 1950–51 • • HEADLESS PACKAGE

6¼" SPACING • • 272 SPINDLES EA. • • D. D. • • 22 OZ. PACKAGE • • 220-440 60 CY

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Wm. Rabinowitz & Sons

TEXTILE MACHINERY, BOBBINS & SUPPLIES

214 - 222 Hamilton Street Phone HEmlock 3-7497 3-7498 Allentown, Pa.

We Offer For Sale The Modern Weaving Division of the CARLTON MILLS CO., INC., PHILADELPHIA, PA.

12—C. & K. 82", W-3, 4 x 2 CONVERTIBLE LOOMS, 1952 8 w/Tri-Color Attachments, 10-⅛" bobbins, 24 harness, worm gear and high roll take-up 30" beam flange, Bijur Lubrication, 3 shift pick counters, 4 bank electric warp stop, 1½ h.p. mtrs.

12—C. & K. 82", W-3 NON CONVERTIBLE LOOMS, 1950 4 x 1—otherwise same specifications as above; 9 w/multipliers.

20M—10-⅛" AUTOMATIC FILLING BOBBINS

1—D. & F. 100" PINLESS WARPER, 19" shoes, G. E. Solenoid operated brake, Reed Stand w/stop motion, compressor, completely mtr. driven including Beaming-off Head.

1—McBRIDE WALK-IN MAGAZINE CREEL w/336 active ends, convertible for either cones or tubes, electric stop motion.

24—HEADS SCHWEITER FILLING WINDERS, 9 spdle 1942, 9 spdle, 1950, 6 spdle 1953.

1—UNIVERSAL MODEL 10B RING TWISTER, 1956 52 spdles., 4-¾" ring, 8" traverse, 4 bank creel, 4 end stop motion, w/5 h.p. mtr.

1—FOSTER MODEL 102 CONE WINDER, serial #1623K, 52 spindles, 7" traverse paper cones, 51A Tensions and slub catchers, 17 spindles available for 6" dyetubes, w/2—¾ h. p. mtrs.

MISCELLANEOUS

Steel Shelving, Filling Boxes, Loom Supplies, McBride Creels, Twister Bobbins, Hoists, B. & S. Hand Skein Reels, Scott Tester, Trucks, etc.

SEND FOR COMPLETE LISTING

Exclusive Selling Agents

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5—AUTOMATIC SKEIN LACING MACHINES & 16 REELERS.

4000—10B SPOOLS
8" T. x 3⅝" H. x ½"
—For Nylon

30M—S-6 LOOM BOBBINS—7⅜" x 9"

1—S.S. SMITH DRUM—100 lb. ROTARY DYE MACHINE

COMPLETE PLANT THROWING

16 U. S.—FACE DRIVE UPTWISTERS & MISC. EQUIPMENT

4—SUPERLOFT MACH.

10—FLUFLON MACH.

28—S-6 LOOMS
72" Width.

500 4¾" 10-B RINGS

1—ATWOOD 2 LB. 10B

250 UNIVERSAL CONERS #50

4 U. S. HI-SPEED SPINDLESS SPOOLERS

1 U. S. Vertical Spooler

4 SMITH DRUM SKEIN CASCADE DYERS,
3-20 & 1-12 arm, stainless.

BOBBINS—SPOOLS—QUILLS—*All Sizes & Types*

PENNSYLVANIA SPOOL & EQUIPMENT CO.

425 LEHIGH ST. ALLENTOWN PA. Phone 3-7545

FOR SALE

1—50" Cloth Chain Mercerizer
2—58" Compressive Shrinking Ranges
7—Cloth Pressure Kiers
1—P&S 60" (Dalglish) Pin Tenter
6—Roller Printers, 2-10 Colors
1—Lot "W" Bore Print Rolls

JAMES E. FITZGERALD
10 Purchase Street Fall River, Mass.
Tel. OS 8-5616

FOR SALE

115M 8¾" Automatic Bobbins (Like New).
2—Rag Pickers—1 Kitson; 1 Dodge.
1—D & F, 48x60 dia; 3 Breaker Woolen Card, with double rub tape condenser. 96 ends.
2—Model A Whitin Spinning Frames. 3" ring. (Recently Reconditioned)
2—D & F, 60" x 60" Iron Cylinders.
1—48" Sargent Burr Picker.

Marshall Greene Textile Corp.
Woolen and Worsted Textile Machinery
103 W. Main St. Millbury, Mass.
Millbury UN 5-4888
Worcester PL 7-2869

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1—Barber-Colman Automatic Spooler 306-spindles
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1—Barber-Colman 66" High Speed Warper with 540-end Type VC Creel

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1—Curtis & Marble 48" Sewing and Rolling Machine
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INDEX TO ADVERTISERS

This index is published as a convenience to the reader. Every care is taken to make it accurate, but Textile World assumes no responsibility for errors or omissions.

An * indicates advertisers who have essential technical information on their products in the IMPORTANT 1957-1958 FACT FILE issue.

MANAGEMENT

Dolge Co., C. B..... 208
*Loper Co., Ralph E..... 215
National Wholesale Dry Goods Assoc. 195
Robert & Co., Associates... 24
Textile Hall Corp..... 201

MANUFACTURING

Abbott Machine Co..... 191
Armstrong Cork Co.....44-45
*Atkinson, Haserick & Co., Inc. 152
Barber-Colman Co., Textile Div. 193
*Dary Ring Traveler Co..... 212
*Davis & Furber Machine Co. 22
Dayton Rubber Co., The Textile Div.....50-51
Deutscher Spinnereimaschinenbau, Ingolstadt 35
Dixon Corp. 197
*Draper Corporation 76-77
Duesberg-Bosson of America, Inc. 214
Eastman Machine Co..... 214
Fidelity Machine Co., Inc... 63
Fife Mfg. Co..... 73
Fletcher Works Inc..... 208
*Foster Machine Co..... 171
*Harwood & Son, George S. 206
Haskell-Dawes Mach. Co., Inc. 196
Herbert Prods., Inc..... 212
Ideal Industries, Inc..... 64
*Intertex Corp. 188
Leighton Machine Co..... 69
*Marshall & Williams Corp.. 199
*McBride, Ed. J..... 18
*National Ring Traveler Co.. 20
Oakite Products, Inc..... 211
Ordnance Gauge Co..... 194
Parks-Cramer Co..... 14
*Perkins & Son, Inc., B. F.. 167
*Platt Bros. Ltd. 152
Pneumafil Corp. 60
*Reiner Inc., Robert..... 189
Roberts Co. 21
*Saco-Lowell Shops.....32, 150
*Supreme Knitting Mach. Co., Inc. 161
*Textile Machine Works... 78
Tompkins Bros. Co..... 192
Ton-Tex Corp. 211
Turbo Machine Co. 80
Unionmatex, Textilmaschinen-Union G.M.B.H. 33
*U. S. Ring Traveler Co.... 194
Universal Winding Co..... 34
Utica Novelty & Mill Specialty Co. 213

(Manufacturing continued)

*Victor Ring Traveler Co.... 38
*Warner & Swasey Co..... 27
Whitin Machine Works.... 37
Whitinsville Spinning Ring Co. 173
Wildman-Jacquard Co. 13

CHEMICAL TREATMENT SUPPLIES

Antara Chemical Div. General Aniline & Film Corp. 112A
*Corn Products Sales Co.... 124
Dodge & Olcott, Inc..... 198
Dow Chemical Co..... 117
*duPont de Nemours & Co., Inc., Electrochemical Dept. 140
General Latex & Chemical Corp. 132
Harshaw Chemical Co..... 126
International Salt Co., Inc.. 128
Keever Starch Co..... 120
Laurel Soap Mfg. Co., Inc. 195
Morton Salt Co..... 125
National Aniline Div. Allied Chem. & Dye Corp. 47
National Starch Products Inc. 142
Naugatuck Chem. Div. U. S. Rubber Co..... 138
Refined Products Corp. .....2nd Cover
*Rohm & Haas Co.....112B
Semet-Solvay Petrochemical Div., Allied Chem. & Dye Corp. 129
Shawinigan Resins Corp.... 134
Solvay Process Div. Allied Chem. & Dye Corp. 121
Standard Chemical Products, Inc. 136

CHEMICAL TREATMENT EQUIPMENT

*Allen Son's Co., Wm..... 199
Best & Co., Edward H.... 192
*Frankl Assoc., Ernest L.... 75
*Hunter Machine Co., James. 23
*Jenkins' Sons, Inc., M. W... 200
National Drying Machinery Co. 56
*Proctor & Schwartz, Inc... 146
*Riggs & Lombard, Inc..... 144
Stowe-Woodward, Inc..... 148

MILL SUPPLIES

*American Enka Corp..... 35
Celanese Corp. of America Textile Div. 70
duPont de Nemours & Co., Inc., Textile Fiber Div. 58-59
Fairtex Corp. 40
Franklin Process Co..... 53
Garland Mfg. Co..... 210
Herr Mfg. Co., Inc..... 164
Industrial Rayon Corp.....42-43
Metlon Corp. 62
Minnesota Mining & Mfg. Co. 71
*Sonoco Products Co..... 31
Steel Heddle Mfg. Co..... 159

AUXILIARY EQUIPMENT

Alemite Div. Stewart-Warner Corp..... 168
*Allen-Bradley Co.....3rd Cover
American Crayon Co..... 201
American Moistening Co.... 28
Armco Steel Corp..... 157
*Aurora Pump Div. The New York Air Brake Co. 196
*Bahnson Company 26
Bellows Company 41
*Bennett Rose Co..... 207
Brainard Steel Div. Sharon Steel Corp..... 61
Clark, Cutler, McDermott Co., Air-Loc Div..... 39
Cleveland Tramrail Div. The Cleveland Crane & Eng'g. Co. 180
*Crane Co. 72
Dayton Rubber Co., The Industrial Replacement Div. 163
*Diehl Mfg. Co..... 67
Esso Standard Oil Co..... 187
Fairbanks Co. 209
*Finnell System, Inc..... 68
Foxboro Co. 66
Gardner-Denver Co. 184-185
Goodyear Tire & Rubber Co., Inc. 17
Gulf Oil Corp. 49
*Hayssen Mfg. Co..... 186
Hungerford & Terry, Inc.... 203
Hyatt Bearings Div. General Motors Corp..... 175
Jenkins Bros. 57
*Johnson Corp. 203
Lincoln Eng'g. Co..... 65
Lindly & Co., Inc..... 205
Link-Belt Co..... 19
Lunkenheimer Co. 177
M-B Products Co..... 206
Minneapolis-Honeywell Reg. Co., Industrial Div..... 74
Moisture Register Co..... 204
*Mount Hope Machinery Co. 183

(Auxiliary Equipment (continued)

*New Departure, Div. of General Motors Corp..... 25
Norgren Co., C. A..... 52
*Precision Gear & Machine Co. 202
Raybestos-Manhattan, Inc. Manhattan Rubber Div... 46
Republic Steel Corp.....54-55
Scherr Co., Inc., George.... 215
*Scott Testers, Inc..... 197
Sheffield Corp., The..... 213
*Spraying Systems Co..... 201
Tennant Co., G. H..... 190
Torrington Co., The (Bearings) 179
Uster Corp. 48
Veeder-Root, Inc. ....4th Cover
Wright Machinery Co. Div. of Sperry Rand Co... 215

CLASSIFIED ADVERTISING
F. J. Eberle, Business Mgr.

EMPLOYMENT OPPORTUNITIES 217
BUSINESS OPPORTUNITIES 220
EQUIPMENT (Used or Surplus New) For Sale 218-225
WANTED Equipment 220

ADVERTISERS INDEX

ABC Kreger Engraving Corp. 223
ABC Photo Gravure Supply Corp. 224
Advanced Textile Co..... 224
American Air Compressor Corp. 224
American Cyanamid Co..... 217
Bialik & Co., Theodore..... 224
Blank & Co., A. & M..... 224
Egan Inc., George W..... 225
Fitzgerald, James E..... 222
Flynn, George D., Jr..... 225
Greene Textile Corp., Marshall 222
Industrial Products of America 223
Lewis, J. Laurence..... 220
Mar-Day Textiles Co..... 224
McDowell Associates Inc..... 225
McKittrik Co., Frank W..... 218
219, 223
Miller Machinery Co..... 225
Mohawk Valley Knitting Machine Co. 225
Pawtucket Mill Supply Co..... 224
Pennsylvania Spool & Equipment Co. 222
Perry Equipment Corp..... 223
Rabinowitz & Sons, Wm..... 221
Republic Textile Equipment Co., 220
Rockwell Woolen Co..... 225
Southern Textile Works..... 225
Stave & Kessler..... 223
Textile Auxiliaries Inc..... 220
Wheeler Co., Frank W..... 222

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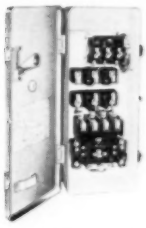
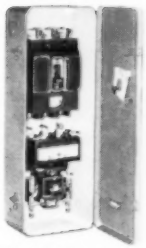
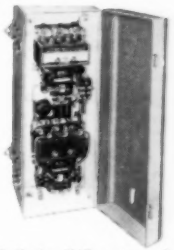


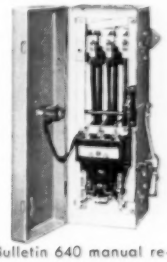
Bulletin 712 combination starter. Disconnect switch contacts clearly visible in "off" position.



Bulletin 713 combination starter with I-T-E circuit breaker instead of disconnect switch.



Bulletin 740 automatic resistance starter for smooth starting. Adjustable to exact motor load.



Bulletin 640 manual resistance starter for velvet smooth starting. Motor acceleration is under operator's control.

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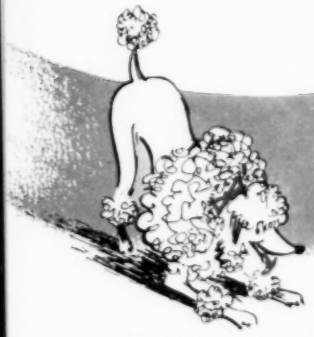

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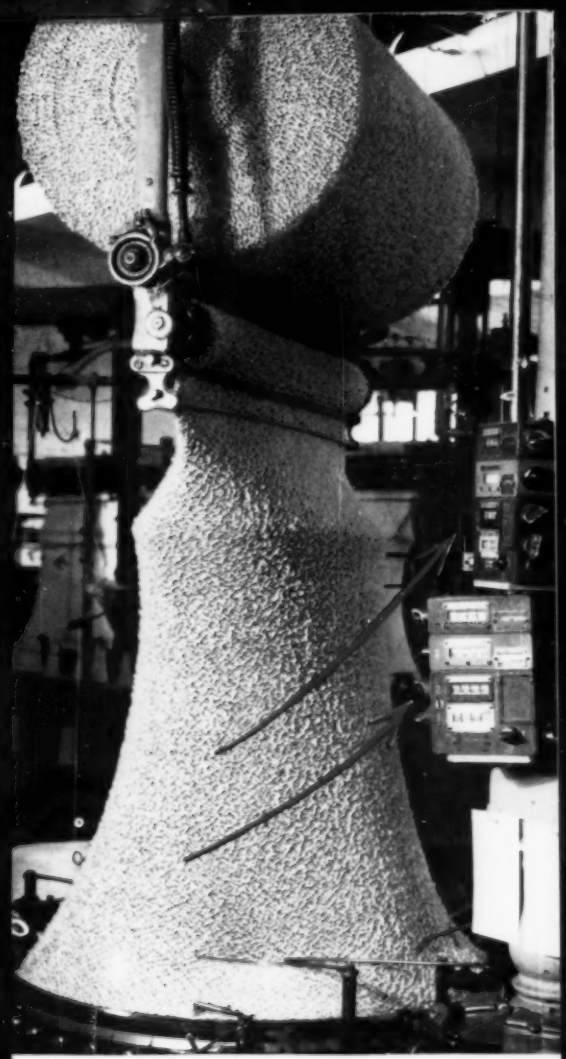
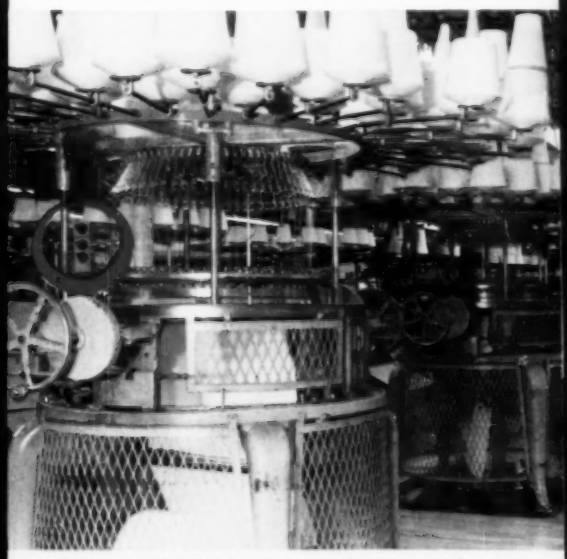


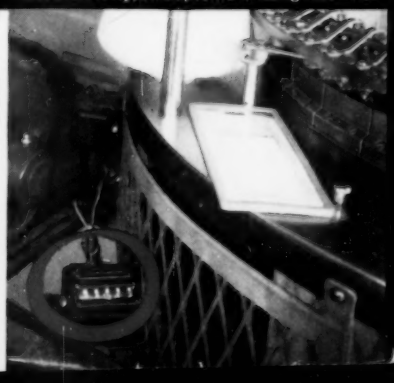
2-3-4 Veeder-Root Rev Counters, with Totalizers, on Crane Knitting Machine.



2-3-4 Veeder-Root Rev Counters, with Totalizers, on Supreme Knitting Machines.

Veeder-Root Medium Size Revolution Counter on Inspection Rolls.

Veeder-Root Predetermining Counter, with electrical relay, on Supreme Knitting Machine.



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